# CHEMICAL MARKETS

THE BUSINESS MAGAZINE OF CHEMICAL INDUSTRIES

VOLUME XXXI SEPTEMBER, 1932 NUMBER 3

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# CHEMICAL MARKETS

VOL. XXXI SEPTEMBER, 1932 No. 3.


## *What is Cash Worth?*

JUST when conditions become intolerable, something happens. A crisis is reached followed by a sudden turn in the affairs of a man, or a company, or a nation. There is a miraculous recovery from illness; a sudden change in the character of a business; the quick overthrow of an established government. What seemed before an utter impossibility becomes suddenly a reality.

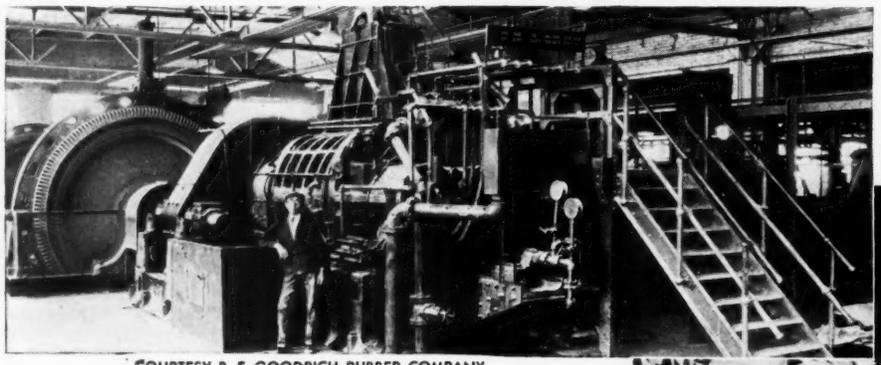
HAVE not conditions surrounding the cash discount reached this point? Are they not become intolerable? When buyers of chemical commodities demand the extension of ten days to the tenth of next month, is not the pressure so great that a crisis is created? Is this not the time for a revolution that will wipe this obsolete, unjust, tyrannical practice off the books?

THIS cash discount is distinctively an American custom, a legacy of the gold panic following our Civil War when cash was really worth thirty-six per cent. It was fastened upon us by the rapid, continuous growth preceding the World War when every business really needed cash for expansions. These conditions are changed. The once-useful cash discount has become at best a trade discount, or at worst a price discount. Within the past sixty days, this unsatisfactory situation has been thrown into hopeless confusion, and what was intended to be a bonus to the prompt creditor has become suddenly a demand for longer credit.

THE resulting muddle—and what mess it has become is clearly set forth in the leading article of this issue—has nothing in it but evil for the chemical industry. It demoralizes sales and confuses bookkeeping. It introduces uncertainties that destroy the confidence of both buyer and seller. It will be a potent breeder of a brood of bad practices. The evil aspects of the cash discount long recognized and long debated have quite quickly been multiplied many times.

RIGHT now is the time to abolish the cash discount. The industry would be infinitely better off to reduce all chemical prices five per cent and sell all chemicals on the terms of net cash in ten days, with five per cent interest charged on bills thirty days overdue.

MILESTONES OF RESEARCH OPPORTUNITY



COURTESY B. F. GOODRICH RUBBER COMPANY

# ..Somewhere on the long road from tree to RUBBER there beckons an opportunity for BUTANOL RESEARCH

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**BUTANOL POINTS THE WAY**

***Another Racket*** The Lambskin Association has recently donned wolf's clothing. In this modern perversion of the ancient disguise, they have been trying to hold up the companies who supply them with their raw materials and a number of chemical producers are on their list of victims.

To these has come recently, a jointly signed letter which points out that the more lambskins sold, the more chemicals will be used, indicating that all will share in the increased business that will result from a cooperative advertising campaign about to be launched by the Lambskin Association. This logic is faultless, and the conclusion drawn from it is priceless. The supplier of raw materials is therefore bluntly informed that his share in the lambskin advertising appropriation is so many dollars, and he is told plainly to what address he may send his cheque by return mail!

The cool affrontery of this allotment of expenses is worthy of a better graft than a little free publicity for polishing rags and bedroom slippers, and we certainly hope no chemical manufacturer has allowed himself to be victimized by this lambskin racket. Quite aside from the obnoxious form of this request for cooperation, it is rotten in principle and unfair in practice. If the sales efforts of any industry are to be financed by the suppliers of its raw materials, why shouldn't the farmer pay for the advertisements of Bond Bread and Lucky Strikes? In such a pass, we shudder to think of the totals that will be reached by the advertising appropriations of our producers of salt and sulfur, copper and rubber, iron and coal.

These tanners of lambskins have quite forgotten what the Census Bureau labels: "value added by manufacture." Out of this must come the selling expenses of each stage of industry. That their effort is a cooperative one for their entire industry, does not alter the basic facts. Indeed in their plea to the chemical industry for advertising funds, they ask us to discriminate in their favor when some competitive materials are, as it so happens, even greater consumers of chemical supplies. This aspect of inter-industry competition is well understood in chemical circles where the market battles of silk and rayon, of lacquer and varnish, and among the different plastics—to mention but three very familiar cases—have seriously affected the supply and demand balance in many different branches of our industry. Common justice, as well as common sense, vetoes contributions to the war chests of any of the chemical consuming industries.

***Which Side of the Picture?*** Business conditions in New England are better. This conclusion is based on personal observation, not heresay. The textile and leather industries are increasing operations. Actual orders, rather than higher prices on the New York Stock Exchange has brought about an increase in employment. New England led the way down in the present depression—why should it not be the first section to show signs of definite recovery?

Chemical industry is already feeling the results of better business in the textile, rayon and leather industries. All three are large consumers of industrial chemicals. Viscose type rayons, for example, on the basis of 1928 operations, consumes about 82,000 tons of caustic soda; 61,000 tons of sulfuric acid, and 24,000 tons of carbon bisulfide annually. The textile industry is proverbially our more diverse consumer, and more tanning will also stimulate chemical demands in several branches.

These tangibles should be pitted against the cautious instinct that insists that a security boom is now unwarranted at this time. Money is very sensitive and Wall Street has long displayed an uncanny facility in discounting the future. Admittedly, the restoration of confidence is to be a very important item in the restoration of business. The man with records of larger shipments from his plant on his desk, who will grudgingly admit that "the feeling is a little bit better," is not helping to screw his courage to the point of driving ahead. Such faith is sorely needed, and maybe it is time to look a little longer on the bright side of the picture.

---

***Warning*** Both Presidential candidates have chosen to emphasize the economic aspects of the political situation. We may, therefore, confidentially expect to be deluged with colored facts and twisted figures, not designed honestly to elucidate the very serious economic tangle of today. So far as these will confuse the average voter, raise false hope, create distrust, or cause confidence to be misplaced, these political economics will be a bad thing for the morale of the country, and it is conceivable that they may even possibly make it more difficult for the next President to put into effect sound, and even drastic reconstructive measures.

Surely one pet problem to be solved on the platform this Autumn, will be the Tariff. Already the favorite argument for reduction is plainly indicated. The charge is made that

the present Tariff Law has killed our export business and seriously magnified the world wide financial crisis by curtailing our imports. Involved with this line of thought will be consideration of international debts and reparation payments, implications of discrimination against American goods because of our Tariff, and innuendoes about international good will.

Some very pertinent facts have just been published in *Die Chemische Industrie*, official organ of the chemical exporters of Germany, who have compiled the figures on the world trade of the fifteen countries which do 95 per cent of the world exportation of chemicals. According to their careful estimate, the world value of chemical trade in 1929 was 5.1 billion Reichsmarks, whereas in 1931, it amounted to only 3.4 billion Reichsmarks. This is a decline of 67.2 per cent. According to these figures, the United States, which stands second to Germany in chemical exports, did in 1928, 711 million Reichsmarks (roughly 170,650,000 dollars); and in 1931, 496 million Reichsmarks (approximately 117,-050,000 dollars), which represents a decline in American chemical exports of about 28 per cent as contrasted with 67 per cent for the decline in the world total. Expressed another way, in 1928 the United States did 14.7 per cent of the world's foreign chemical business of that year; and for 1931, 14.4 per cent. Plainly, the decline in our chemical business is less in proportion to the decline in world chemicals business during the depression. The argument of our tariff killing our chemical exports is pretty obviously fallacious.

We have no doubt that much the same international comparison would hold good for cotton, wheat, machinery, motor cars, and other important American exports and that our declines in foreign trade, both of purchases and sales abroad, are the result of the world wide depression. Sir Arthur Salter, certainly one of the sanest of our international economists, and favorite official British representative at all sorts of financial conferences has said the same thing in other words:

"As events are developing now, it is hard to see how the creditor gold-surplus countries (United States and France) will in the ensuing year be able to sell any exports, except a few articles which can neither be dispensed with nor be produced elsewhere. Cancellation of, or remission of their governmental debt would reduce the extent to which their exports must be cut off; monetary action tending to increase gold prices, and a reduction in tariffs, would do so too, by giving them more imports. But new foreign lending alone can prevent a very large reduction, perhaps almost complete cessation, of their export of manufactures."

This example drawn from the tariff shows how easy it will be to be misled by political arguments and swayed by political sentiments at the very time when we need in government and in industry, the straightest kind of business thinking.

---

## *Quotation Marks*

The present century is one in which the mantle of power is passing to the chemical industries. In all branches of production, mechanical processes give way to chemical processes.—*Ignace Mosciki, President of Poland.*

I do not prize the word cheap. It is not a word of hope, nor a word of cheer. It is not a word of inspiration. It is the badge of poverty, the signal of distress. Cheap merchandise means cheap men and cheap men a cheap country.—*William McKinley.*

It is of the utmost importance in our own interests that, so far from taking any steps that might discourage foreign countries, we should make every effort at Ottawa to put heart into the world and concert measures in which other countries may later cooperate. The political differences of the world the empire cannot cure, but on the economic side cannot some message of hope go out to world trade dying in the grip of almost universal restrictions?—*H. R. H. Prince of Wales.*

The trail to industrial advancement in modern times is blazed by research.—*Paul D. Merica.*

---

## *Fifteen Years Ago*

**(From our issues of September 1917)**

General Chemical, through Dr. William H. Nichols, offers its nitrogen fixation process to the Government.

Third Exposition of Chemical Industries opens at the Grand Central Palace in N. Y. City.

Monsanto plans $1,500,000 plant in East St. Louis, and Stauffer Chemical authorizes expenditure of $100,000 for new buildings at Vernon, Cal.

Adolf von Baeyer, pioneer in the field of synthetic indigo, dies in Munich.

Prof. Julius Stieglitz, A. C. S. president, reviews accomplishments of the German chemists at 55th Annual Meeting in Boston.

# The "10th Proximo" Discount

## *A Survey of Policy and Practice*

***Are you allowing your customers to pay all bills on the tenth of the following month and to take the cash discount? Replies to this question from thirty-seven representative companies in all branches of the chemical industry are: Yes, 6; in Some Cases, 15; No, 17. And their reasons--yes, maybe, and no--are summarized here to help clarify the situation by suggesting some fair and uniform practice for the whole industry.***

BECAUSE of—or taking advantage of—the two cent federal tax on cheques and the one cent added postage on first class mail, there has swept over American business a wave of requests—or demands—that buyers be allowed to pay all the month's bills with one cheque on the tenth of the month following, and to deduct the customary cash discount. So suddenly has this movement started that it took all industries unaware and a tangle of all sorts of discount practices has resulted. So popular has the movement been with all classes of buyers that no branch of industry has escaped, and the confusion is worse confounded. So potent is the influence of any customer in this buyer's market that very plainly some change in the cash discount terms is certain to be the outcome.

What will that change be?

The present confusion cannot continue. Different terms from different sellers make the cash discount a price consideration. Plainly the industry must arrive at some uniform practice. The more promptly this is done, the better for all companies; and with the object of helping to clarify the thought on this pressing problem, CHEMICAL MARKETS wrote to fifty chemical company treasurers, asking whether or not they were changing the usual cash discount of "1%, 10 days," and inviting the reasons for their present policy.

Before summarizing these replies and quoting from the most illuminating of the comments pro and con, let us look at the cash discount muddle from the point of view of the buyers as seen in typical requests for tenth proximo discount. Throughout the majority of these runs the theme of increased taxes and decreased bookkeeping expenses as is shown in this typical form letter sent to the suppliers by a prominent manufacturing and jobbing house in Chicago the very day the two cent cheque tax went into effect:

> Under the new Revenue Law, effective June 21st, the Government will assess a tax of 2c on each check issued. We would, therefore, greatly appreciate the privilege of paying your invoices on the 10th or 15th day of the month following date of shipment, deducting the same rate of cash discount as we are now receiving.
>
> We have already received similar requests from a number of our customers and believe that these terms will soon become as general as 2% 10, net 30 days has been in the past.
>
> All requests made of us for these terms are being granted and we are hopeful that our suppliers will meet our views as we feel that this should result in a substantial saving in your accounting work.
>
> Awaiting your favorable reply, and thanking you for this courtesy.

In the same general vein, and still emphasizing this economy plea, a large wholesale drug house on the Pacific Coast sent out the following circular letter over the mimeographed signature of their "Auditor and Office Manager":

> The new Excise Tax, which was effective June 21st, imposes a tax of 2c on every check. The new postage rate effective July 6th will increase our postage on every check 50%.
>
> We feel that it is absolutely necessary, at this time, to request that you allow us the privilege of paying your account on the tenth of the following month for all purchases during the previous month.
>
> Many manufacturers have voluntarily granted these terms and we feel that you should give this matter thoughtful consideration.
>
> It will not only reduce this Excise Tax and postage to a minimum, but will effect many economies in the bookkeeping work necessary to handle these accounts.
>
> You will also benefit inasmuch as these economies in bookkeeping will be effected correspondingly in your offices.
>
> Please indicate, if it is agreeable to you, your acceptance of these terms as we believe it will enable us to offset the additional cost of operating by savings through the economies in bookkeeping and clerical work, which will be of mutual benefit to all concerned.

Quite a little more frank in its wording is the letter below, (from the Purchasing Agent of a large manufacturing firm in the fine machine field) in which it is rather painfully easy to discern the steel beneath the velvet:

> Terms for the payment of purchases made by this company are specifically provided for in our purchase order. The clause reads as follows: "Payment shall be made on the 20th of the month following shipment less customary cash discount."
>
> For the purpose of helping to reduce the added expense of the Government Tax, that is, postal and tax on bank checks, we desire to make these terms universal.
>
> Beginning August 1st, we plan to have one payment date a month, paying all invoices of the preceding month on the 20th of the following month, deducting the customary cash discount where discounts are allowable.
>
> In the absence of word from you to the contrary, we shall assume that it will be satisfactory to make settlement in this manner.
>
> We thank you for your continued cooperation.

### "A Gun at the Head"

But for plain, even brutal, outspoken language, with no pretense even of saving either tax or postage by lumping payments, the award must be made to one of the large paper companies. Their letter, in essence, is simply a bold demand to extend credit terms from ten to forty-five days. It has the merit of frankness, though just why the customary cash discount is "unequitable" is not clear, and why a month and a half use of the seller's money is necessary is equally obscure:

> The terms under which we purchased from you provide for a cash discount. Under existing economic conditions, we consider unequitable the period of time in which your bills may be discounted. We would ask that you extend the discount period to forty-five days from date of invoice.
>
> I look forward to a favorable reply by return mail.

Small wonder that the chemical producer has come to regard these demands for "tenth proximo discounts" not as sincere requests in the object of economy and simplicity, but, let us grant for a moment that the cheque tax and additional postage are their true inspiration. Such a movement throughout all industries and trades in every state of the nation would obviously reduce markedly the number of cheques drawn and the number of letters mailed.

This material saving to business would mean a material cut in the income the Government will receive from these new excise duties. Since our federal budget must be balanced, it only means that if the citizens lay awake nights figuring out how they can avoid paying as much as possible of the new taxes, Congress will only have to continue to devise more and more new, and likely more and more objectionable ways of raising the necessary government income. So in principle, as well as in practice, this concerted effort to duck taxes—it is hardly tax dodging—is not, in the long run, the cleverest policy. However, most chemical executives do not recognize the legitimacy of this tax-postage claim, and while few express their views so boldly, many share the opinion of a company president who writes:

> I certainly feel that it is a "gyp" and cannot understand the psychology of the treasurer, secretary, or accountant of these various companies, because surely everyone has the same feeling in regard to a customer who takes advantage of a 1% ten day discount, paying it at the end of twenty or thirty days. I believe all of these same companies would return a check in payment of an account where the discount was taken after the expiration of the discount period. Yet they appear to be of so hysterical a frame of mind today that black has become white.
>
> All I can see in it is a very fine opportunity for the accountant to play his game, whereby he shows that by management of the monies of the company, he is able to earn for the company a two per cent discount on all accounts throughout the year, making his position very firm as a money maker. Ordinarily, the Accounting Department is considered a "non-productive" element in the overhead.

What has been the chemical industry's answer to this suggestion? Of the fifty companies CHEMICAL MARKETS questionnaired, we received replies from thirty-seven, and these answers summarize as follows:

Six companies are allowing tenth proximo dating without question or debate.

Fifteen companies have met the situation by some form of compromise—two or three payments a month, or one or two payments to customers who have a certain number of invoices.

Seventeen companies have refused to change the old and established practice of 1%, ten days.

### Yes, 15%; Partly, 40%; No, 45%

Expressed a different way, and assuming these replies are fairly representative of the industry's attitude—Yes, 15%; Partly, 40%; No, 45%. These are round figures, but they bring out clearly the significant fact that a majority of the industry have acceded in whole, or in part, to a change in the old discount terms.

The few firms allowing the tenth of next month discount to all customers, do so on the grounds of economy and fair play, and the comment below is quite typical of the position taken:

> Whenever requests have been made to take advantage of settlement on the tenth of the month following from reliable concerns, we have complied on the theory that it will give our customers a chance to save not only in the check tax, but in clerical work as well. We are granting these requests because we have in turn requested the same, and in practically all instances have had our requests granted.

One notice sent by one chemical manufacturer is a very specific example of the competitive element which has already been introduced by this upset of the established trade custom:

> We have always regarded that a ten day discount period was liberal allowance for anticipating the thirty day maturity of our bills. We have, however, learned recently that a competitor has offered to a few favored customers, discount of 1% if the months' purchases are paid by the 10th of the month following. We have therefore decided to put similar terms into effect at once with all of our customers.
>
> Beginning August 1, 1932 we will allow terms of thirty days net on monthly balances from the first of the following month,

or less 1% for cash payment by the tenth of the said following month.

It is just this injection of competition upon terms which many conservative executives dread for, as one points out, sixty days credit for domestic business is not only unreasonable for the financially able buyer, but it is dangerous to the sharp or the weak purchaser. Moreover, it naturally suggests one per cent for thirty days and two per cent for ten days. The more liberal the terms and the more complicated the payment dates, the more opportunity there is for all sorts of chicanery and indirect, private arrangements which are a constant temptation to use the cash discount as a competitive weapon. For this reason, there is special interest in what is at present the frank and sincere efforts being made to compromise the new situation and work out a solution that will meet the demand for saving and yet maintain the spirit of the ten day discount. Typical of these efforts are the following:

With reference to your letter asking whether we are permitting customers to pay less discount on the 10th of the following month, our Company's position on this matter is that the imposition of a 2c tax on checks and 1c additional postage is no reason why our customers should be permitted to discount on the 10th of the following month.

A number of our customers have requested that they be permitted to group their payments so as to reduce the additional tax and postage expense, and we are cooperating with them by offering them either one of the following two plans:

### A Schedule of Payment

1. Weekly payment. All bills dated in one week to be paid the following week. If paid by the end of the following week this will give an *average* of ten days for discounting.
2. Payment three times a month.
   a. Bills dated 1st to 10th payable 15th.
   b. Bills dated 11th to 20th payable 25th.
   c. Bills dated 21st to end of month payable 5th prox.

   This also gives an *average* period of ten days for discounting.

We do not believe that any customer can fairly contend that payment three times a month is too great an expense as compared to once a month. The total additional cost in postage and check tax is 6c and we find that there are very few of our customers who do not concede this point immediately.

Without doubt, many concerns are seizing upon this increase in postage and the check tax as an opportunity to demand longer terms of payment either on discount or net basis from their supply houses, and while we feel that it is only reasonable that we should cooperate with them, we do not feel that it is necessary to do this to a point where our own Company is put at a disadvantage.

During times like these it is very natural that business houses should immediately seek to avoid having any extra overhead placed on their business as a result of new taxes. This is something to which every wide awake concern is giving plenty of attention. However, cash discount terms are decided on for very definite reasons and it is not sound to permit these reasons to be set aside because of the imposition of a check tax and increase in postage rates.

One of the large alkali producers has been answering this question in this fashion:

We have received of late many requests from our customers for a change in contract terms due to the new Federal tax placed on checks, and the increase in postage rates, and while in the cases of those customers receiving many individual invoices during the month, the requests are somewhat justified from both an economical and practical standpoint, there are, on the other hand, those customers who receive one or two invoices per month, who have joined in this procedure.

While we are in hearty accord with any measure of practical economy, we nevertheless feel that unwarranted liberties are suggested by some of these requests, with the contract terms, which might lead to embarassment to both the Seller and the Consumer, if the requests were acceded to in each instance. We have therefore considered each request upon its merits, and offer the following for your consideration:

1. Customers' accuonts receiving less than four invoices per month, are payable in accordance with the terms of sale to obtain discount.
2. Customers receiving 4 to 15 invoices per month can accumulate the invoices and pay on the 5th, 15th and 25th of each month, with the usual discount.
3. Customers receiving 15 or more invoices per month can accumulate the invoices and pay on the 5th and 20th, with the usual discount.

We are not in sympathy with the breaking down of the regular terms which have been the accepted practice in the chemical industry, and it is our desire to uphold the continuance of these terms. We also realize that individual problems face the consumers, and for this reason we request your acquiescence in the above procedure.

### Three Payments a Month

Closely similar to this compromise proposal is the form letter being used by one of the oldest and largest of the New England chemical distributors, as follows:

We have had so many requests similar to yours as contained in your letter that it has been necessary for us to suggest the following method of payment.

All invoices dated from the 1st to the 10th to be paid on the 15th of the same month. All invoices dated from the 11th to the 20th to be paid on the 25th of the same month; and all invoices dated from the 21st to the 30th to be paid on the 5th of the following month.

This method has the advantage of facilitating your accounting routine while at the same time preserving the spirit and intent of the 10 day cash discount privilege.

This is the arrangement we have with the manufacturers whose materials we supply you. Any other method would necessarily work a hardship on us.

We think you will agree with us that it is a reasonable solution. We shall be pleased to put it into effect at your request.

Assuring you of our desire to cooperate.

Numerous variations of the above suggestions have been offered, but these three letters are quite representative of the way in which the matter is being handled by the many firms which are working on compromise proposals. Again, it is to be noted that there is as yet not even any accord on what the best and fairest alternative proposal should be. Already the basis of the number of invoices is causing trouble in the form of disputes and misunderstandings with customers, while these more or less complicated arrangements are admittedly involving a great deal of

extra work in the seller's accounting department and opening up new holes through which the "discount laggards" are not hesitating to crawl.

The financial unfairness of the camouflaged plea for saving two cents in tax and against the cost of the discount is very cleverly pointed out in the following letter from a chemical producer to a chemical distributor:

We have your letter of . . . suggesting a change in your method of paying us. You are now paying three times a month,—your suggestion is to eliminate one of these payments by settling your account twice a month. We figure this would save you one check on which the Government Tax would be two cents and postage for one letter which would be three cents. This would save you five cents a month.

Averaging your account from the first of the year and figuring the interest at six per cent, your revised terms of payment would cost us $14.72 per month. This hardly seems to be a fair proposition. However, rather than cause ill feeling we will compromise with you and will allow the five cents extra per month that it costs you to pay us three times, instead of twice a month.

Your proposition, as near as we can figure it, is a three hundred to one shot and is at least reminiscent of Mr. Ponzi.

It is only fair to state that your letter is not original as we have had a great many similar requests but they are certainly not made primarily in the interest of saving taxes as they state. If everybody is going to spend their time in perfecting ways to dodge the taxes levied by the Government it will be very interesting to learn from just which source the Government is going to obtain its running expenses. Moreover, if we keep thinking up ways of taking money from each other, how are we even going to have a tendency toward better conditions, let alone actually achieving them. Every time a purchasing agent gets a lower price, he has expended just exactly that much effort toward eliminating his own job.

### Old Terms Without Comment

The companies which are holding to the old terms are crisp and brief in their comments; the two following are fair samples:

We are not asking such discounts ourselves and hence feel they should not be asked of us.

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We are endeavoring to hold to our regular terms. We have had evidence that some people are making the tax on checks the excuse for requesting monthly settlements subject to cash discount. In our opinion this should be discouraged, and it is our policy to accede to such requests only under pressure.

"That's the rub"—under pressure. For whoever has followed this movement carefully cannot fail to have been impressed with rapid transition for what started as a request to what, in two months, has become a demand—a demand often backed with what is an extremely thinly veiled threat. Conditions are certainly very ripe for such demands from buyers to sharpen sales competition upon the thoroughly unsound and unsatisfactory basis of terms of sales. Already, we see this happening, and the unpleasant prospect of so demoralizing and unfair elements in chemical marketing was plainly in the mind of the president of one of our largest chemical corporations when he wrote:

By and large, while chemical sales contracts have not been as uniform as we might wish, nevertheless, there has been, with the exception of returnable containers, little direct competition upon terms. This is well and good for all sellers and for all buyers alike, and it would be deplorable if the present cash discount mix-up should result in any competition of this type at this time.

A big company treasurer writes:

As a matter of fact, chemicals ought to be sold "net cash in ten days," as burlap, and starch, and metals, and many other industrial commodities and raw materials are sold. It would clear up the present situation and put the whole business on a sounder basis. The proposal has been discussed several times, and I remember an editorial on the subject in CHEMICAL MARKETS that asked the question, "Why the Cash Discount?" I don't know any good answer, and I have yet to hear anyone who has found a sensible answer to it. When you can hire a hundred dollars at your bank for thirty days for fifty cents, why pay a customer one dollar for twenty days' use of the same sum? That's what the cash in ten days at one per cent means to my company.

In spite of present conditions, or better yet, because of the present low prices of chemicals, why not abolish the cash discount? It never was a fair practice, and it has always been taken advantage of. We have talked a lot about the trouble it makes and the expense it causes. Its cost is fast getting to be altogether exorbitant and now, it seems to me, is a good opportunity to abolish the cash discount entirely from chemical selling.

Two other companies indicate that they concur with this opinion.

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## *Company Booklets*

Bakelite Corp., 247 Park Ave., N. Y. City. "Bakelite Review" for July contains a number of new and novel uses for Bakelite.

The Celotex Co., 919 N. Michigan Ave , Chicago. Two new bulletins describing the Ferox Process and its use in preventing fungus and termite growth.

Hercules Powder, Wilmington, Del. "The Hercules Mixer" for July-August is an interesting review of the various Hercules Powder Co's. activities.

Mallinckrodt Chemical, St. Louis. The August price list.

National Aniline, 40 Rector St., N. Y. City. July "Dyestuffs" contains a splendid article on "Dyeing Chinese Rugs" by G. O. Richardson, Tientsin branch manager.

Philadelphia Quartz,. 121 S. 3rd St., Philadelphia. A new leaflet describing the use of silicate of soda in combating corrosion. The August issue of "P's & Q's" deals briefly with silicates in the ceramic industry.

Roessler & Hasslacher Chemical, Empire State Bldg., N. Y. City. The 1932 edition of "Arctic-The Refrigerant" contains several new chapters on the properties and uses of Artic—new thermodynamic and other technical data for users of specifiers of refrigerants. It also contains sections devoted to the handling and servicing of Artic, traffic regulations, and other details. Also the R. & H. quarterly price list.

Rossville Commercial Alcohol, Lawrenceburg, Ind. "Rossville Alcohol Talks" for July deals with alcohol and the vitamins.

Sodium Silicate Manufacturers' Institute. A 55-page booklet describing the use of silicate of soda for curing concrete. The booklet is authoritative, complete and splendidly illustrated. Copies are available through Grasselli, Mechling Bros., Philadelphia Quartz, and Standard Silicate, members of the Institute.

# Luxuries of Chemical Distribution

**By H. Gordon MacKelcan**

**Vice President, Innis Speiden and Company**

FLYING right in the face of the decline in the general level of all commodity prices, although we know only too well that chemicals have not been an exception to this downward movement, we have had some very real advances in the costs of chemical distribution. Most obvious and most significant is, of course, the advance in freight rates of ten per cent up to two cents per hundred-weight.

This newly increased cost plays a rather important part in the economics of chemical distribution, for there was a time when less carload rates were only about fifty per cent higher than for full car shipments, whereas today they are double or more. This means that at the distribution point a fairly substantial differential exists that emphasizes the importance of car shipments to warehouse stocks for local delivery.

We have recently recalculated very carefully the actual costs of entering and billing an order, and have found that it is so close to one dollar that we can fairly take this round figure. In like manner, we do not discover a decline in the actual expenses of storage, handling, and cartage that is at all comparable with the lower level of chemical prices.

At a time when the attention of the whole chemical trade, producers, importers, and local distributors, is so closely drawn to these costs of distribution, it is very illuminating to the individual problems of any firm to break down these expenses into groups, and I am thinking that others will find that the costs of physically moving chemicals from maker to user, if not actually higher, are certainly very little lower than in 1929. As many of these elements of cost are beyond the direct control of the chemical industry, we should the more scrupulously scrutinize what might well be called the luxuries of distribution. These, it will be found, are controllable.

So long as demand continued to expand and prices were maintained, accompanied by an increase in output and more or less technological improvements both making for lower production costs, our chemical industries remained almost indifferent to distribution costs. Many industrial prophets were preaching from the text of mass production and we accepted the theory that if a thousand pounds of chemical yielded x dollars in net profit to the maker, then two thousand pounds would yield not \$2x, but 2½x or 3x, or even more. It is a pretty formula. With certain limits it is quite correct. It is dangerously easy, however, to overlook how very narrow those limits are. The bounds are set by the demands for that chemical and well fenced in by the costs of distributing it.

Our chemical executives have been guilty of no worse crime than following the economic fashion of the day when they pushed production schedules forward and demanded that sales programmes be extended to move the increased output. Manufacturers, jobbers, and retailers; the railways, the gas and electric companies, even the stock brokers—all American business has worked frantically upon this basis. In fact, we in chemical fields have been able to find certain unique justifications for the mass production policy.

In chemical plants, a continuous and automatic operation effects some astonishing economies that cannot be obtained in like proportions in a machine shop or a chain grocery. Furthermore, we have quite easily deluded ourselves into thinking our distribution costs are comparatively low and that our markets can be expanded at comparatively small additional expense. We maintain no such costly show rooms as the automobile industry. The social graces of bond and insurance selling are not required of the chemical salesman, and the purchasing agent of mill and factory does not demand to be wined and dined as do the department store buyers. Our advertising has no "sex appeal" to tempt us into popular magazines at

several thousands of dollars a page with an additional hold up for the pretty hoyden with a neatly turned ankle, or the dowager with the distinguished name to tell the world she uses no diphenylguanadine but ours. We do not need to call upon and cultivate and encourage with bonuses and prizes, the thousands of sales outlets that distribute soap, candy, and cigarettes. Our customers are comparatively few, well known, and financially responsible.

We do not pack ten cents worth of chemicals in a ten dollar cut crystal bottle. We have not even been stampeded into using cellophane to keep our products sweet and fresh. We do not, on the one hand, pay for police protection, nor on the other, have we yet come to open racketeering to force our sales in new markets, or to hold contract customers in line.

### Deluding Ourselves

And so we cherish the belief our distribution costs are low because forsooth we do not indulge in these luxuries of modern merchandising. Nevertheless, we do have some pet extravagances of our own, some spendthrifty habits it would be wise to break.

We hear a great deal nowadays about the dangers and distress of technological unemployment. Very little consideration seems to be given to dangers and distress of technological displacements. Every technological improvement, whether it results in a lower cost of raw material or a higher yield, is an incentive to one of the chief elements in our mounting distribution costs.

Any producer who feels he enjoys some advantage in plant costs falls a ready victim to the idea of expanding his output. Just as day follows night, this means that he must expand his sales either by selling more in his old territory, or reaching out into new fields. The result is more salesmen, with more reports and more expense accounts, and a wider sales area with more packing and freight charges. In a majority of cases, I am certain that this game is seldom worth the candle if it has to be played against a determined and reasonably efficient competitor, be he small or great. When a competent outside authority—C. M. Bigelow—states that freight equalization is 31.8% of the cost of distributing industrial chemicals, which are at once our deepest and bulkiest chemical wares, we have an indictment of our bigger market fallacies that is hard to answer when we learn that all of the 3073 counties in the U.S., 150 or 4.9% consume 75% of all our industrial raw materials, we have a sharp limit set to the geographical limits of chemical consumption.

Let us put down unnatural and uneconomic extension of markets for heavy chemicals as our first distribution luxury.

For the fine chemicals—which would include not only pharmaceuticals and aromatics—but a host of industrial materials such as dyes, accelerators, tanstuffs, indeed any chemical selling at a price sufficiently high to cover any freight rate from Bangor to Dallas—we have the parallel luxury of duplicated production. It is just every bit as foolish for four dye makers to manufacture and market sky-blue-pink (for which there is a total national market of 5,000 pounds a year) as it is for four makers of caustic to sell in Kansas City (which is the logical market of one plant). Grant all of these dye makers can produce on a competitive basis so far as plant costs go, the splitting of the market four ways is a luxury of distribution.

We do not indulge in fancy packaging to catch orders; but we luxuriate in a host of ancient evil practices in handling our returnable containers. These were expensive habits when they involved only drums and carboys: they become nigh ruinous when we are using cylinders and multiple unit cars.

"Service" is just as badly abused in commercial circles as "research" is among the scientific men; and technical sales service has been a fine contributor to the mounting costs of distribution. It has a logical idea illogically developed through the pressure of competition, for it is one thing to teach a consumer how to use a new chemical product and quite a different matter when he demands that we help him with any sort of a chemical problem from drawing plans for a new plant to taking spots out of the telephone operator's party dress.

### But What is the Cost?

In the abused name of "Service" we have catered to the consumer's perfectly natural desire to hold down inventories and encouraged hand-to-mouth buying. Again a good idea has gone wrong thanks to overcompetition. It is sound, from the consumer's point of view to keep the investment in chemical supplies down as low as possible. It is unsound for the chemical producer, badly equipped, to handle orders for small, broken lots, to sell many and frequent shipments at large quantity prices. If we knew what it actually cost to sell, to enter, to pack, to deliver, to bill, and finally to collect for a keg of this and half a dozen drums of that, I am confident we should not be so liberal in our quantity prices or else turn over much of this business to local agents.

All these spendthrift habits—too large sales territories, too many products, too careless handling of returnable containers, too much "service"—need to be broken if we are to balance our budget by bringing distribution costs in line with lower costs of materials and manufacture. Plenty of "Keely cures" have been suggested. All we need is to appreciate their folly and to apply a little fortitude to their cure.

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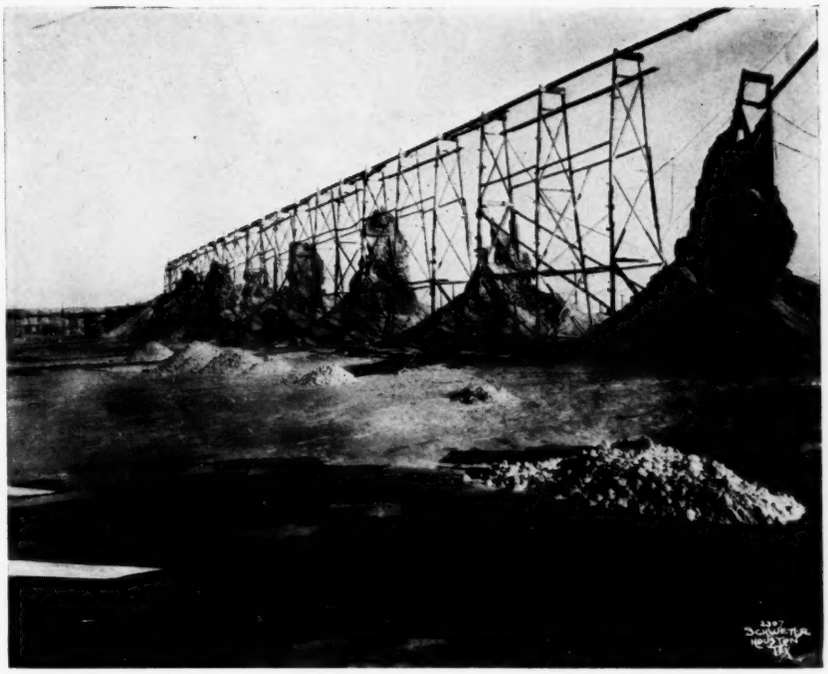
Hitherto, Japan has been importing synthetic urea from Germany in order to meet her domestic demand. Recently, the Denki Kagaku Kogyo Kaisha has succeeded in discovering a synthetic urea as the result of its investigations. The company is manufacturing the newly discovered chemical at its factory at Aomi, Niigata Prefecture. If the production cost is low enough, the new chemical will become an important fertilizer. Urea will be as important as synthetic ammonia.



# Sulfur vs. Pyrites

By Henry T. Hotchkiss, Jr.

OF APPROXIMATELY two and a quarter million long tons of Texas crude sulfur produced annually, practically all is consumed in making products of greater economic utility,—fertilizer, heavy chemicals, paper, rubber, etc. The sulfur is usually burned, and the oxidation product, sulfur dioxide ($SO_2$), used directly or further oxidized to sulfur trioxide ($SO_3$) for the production of sulfuric acid.

Thus, in the first step of sulfur utilization, the crude material (generally over 99.5 per cent pure as it comes from the mines) begins to compete with other materials as a source of sulfur dioxide. Pyrites is the chief com-

petitor. Other sulfide ores and hydrogen sulfide gas have also commercial possibilities for the production of sulfur dioxide.

Pyrites and Sicilian sulfur were prime sources before crude sulfur was available in quantity in the United States. The efficiency of both the pyrites and sulfur burners has been increased so that today new technological developments need to be carefully balanced.

The flash roasting of pyrites fines from flotation residues as developed by H. Freeman [1] the Nichols-Herreshoff furnace for roasting fines[2]; and the improved sulfur burner discussed by R. F. Bacon in a recent issue of CHEMICAL MARKETS[3]; are of particular interest. These reflect the current trend. The flash roasting process is receiving the sponsorship of interests desirous of placing the Canadian pulp industry in an independent position with respect to sulfur, and a 3,000,000 ton deposit of massive pyrite ore has been opened in the Dominion with this in view [4]. Canadian industries annually purchase sulfur from the United States valued at $4,000,000.

The following comparative table outlines the operative factors for each type of burner as applied to the pulp industry.

| | *High Temperature Flash Roaster* | *Low Temperature Roaster* | *Sulfur-spray Burner* |
|---|---|---|---|
| Raw material | flotation residues (200 mesh) | crushed pyrites | crude sulphur |
| Sulfur content | 50% | 45% | >99.5% |
| Temperature of combustion | 1100-1150° C. | 600-800° C. | 1200° C. |
| Ash | magnetic oxide | red oxide | nil. |
| $SO_2$ by volume | 11-12% | 8.7-11.7% | 19-20% |
| $SO_3$ | <0.1% | <1% | nil. |
| Sublimed sulfur | | | nil. |
| Efficiency of Sulfur combustion | 99% | 98% | 99-100% |

These burners all approach the ideal of complete utilization of sulfur. On the basis of oxygen consumption the sulfur burner is most efficient. In the case of pyrites the maximum sulfur dioxide content of the resulting gas, using air containing 20% oxygen by volume, will be for the reaction:

$$4FeS_2 + 11O_2 = 2Fe_2O_3 + 8SO_2 \ldots 15.4\%$$

and

$$3FeS_2 + 8O_2 = Fe_3O_4 + 6SO_2 \ldots 15.7\%$$

This is an efficiency of 75 per cent. For the sulfur burner the efficiency of oxygen consumption may be 95 per cent or better, as a result of a closer adherence to the stoichiometrical proportions: S and $O_2$ to $SO_2$, where the gas produced is as rich in sulfur dioxide as the air is in oxygen, or 20 per cent. Thus theoretically, the sulfur burner gas is 4.5 per cent richer; in practice it may be several per cent more. Where acid production is contemplated a rich gas is not important as the oxygen content has to be regulated for the conversion to sulfur trioxide.

Types of sulfur burners may be classified conveniently according to their purpose of providing stationary films, flowing films, liquid particles, vapor, or spray. [5]

1. Pot type [6-9].
2. Stacked pans [10-12].
3. Vertical multi-shelf [13-15].
4. Horizontal furnace [16-20].
5. Inclined plated [21].
6. Rocking furnace [22].
7. Rotating cylinder [23].
8. Rotating cylinder or drum with inner shell, baffles, or spreaders [24-34].
9. Spray of powdered sulfur with air blast [35-36].
10. Molten sulfur divided by air blast on or through pools [37-39].
11. Sulfur distilled and then burned [40].
12. Liquid sulfur atomized by air, and secondary air supplied to complete combustion [41].

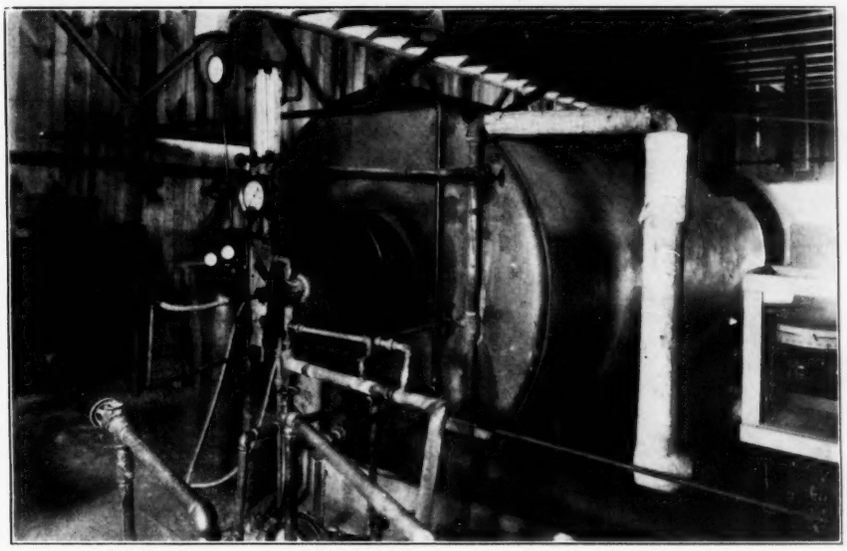
Pyrites roasting has been carried out successfully in furnaces having fixed stepped hearths, with vertical central shaft carrying conveying rakes [42-44]. The burning of fires has been studied from several angles [4, 45].

The flash roaster raw material comes from the tailings of another industry, and is dependent on a source of crushed ore since the grinding is accomplished in the process of extracting metallic values from the ore. Where these are absent the entire cost of reducing lumps of pyrites to fines has to be assumed by the roasting process. The sulfur burner, on the other hand, depends only on the fact that the element may be mined economically, and in sufficient quantity to insure an adequate supply. The present mines have a life variously estimated up to forty years at a normal rate of consumption. Further reserves may be located in the extensive drilling operations which are being carried out on the Texan coastal plains. A recent report states that favorable results have been obtained on a new lease.

### Pyrites Wastes

The burning of sulfur is independent of any previous or subsequent process. Pyrites roasting always entails ash disposal and dust removal from the gases. Where the ash contains copper or other values these are removed. Commercial outlets for some red oxide as a pigment or for smelting operations have been found. The fine magnetic oxide from the flash roaster has been suggested as a suitable starting point for the production of sponge iron. It is claimed that a good grade of ore is available when the ash is crushed and subjected to an electro-magnetic separation by which the gangue and unburned sulfide particles are eliminated. This is a recent development.

Many factors determine the location and the type of equipment of a sulfuric acid plant. Reference to the source of raw materials and the sales territory must be made to minimize transportation charges. An adequate supply of water is essential. The effect of exhaust fumes in populated districts requires care-



*A new type sulfur burner which has been developed. The construction cost of this new type sulfur burner is small, operating costs low, and it can be started after a Sunday shutdown and gas brought to full strength in thirty to forty-five minutes*

ful consideration. The outlay for land, the plant, labor, raw materials, and freight charges all enter the picture.

Assuming that the factors governing the location of the plant are so balanced that a choice must be made between sulfur burning or pyrites roasting equipment, what will be the determining influences? Sulfur being a technically pure substance has inherent physical and chemical advantages over pyrites in sulfur dioxide production. These have been mentioned. The gas from a sulfur burner does not require as much conditioning before entering the converters. Furthermore the heat content of the gas is utilized by installing a waste heat boiler in the sulfur burning system. This generates sufficient steam to meet all heat and power requirements of the process, whereas with pyrites additional power must be supplied to drive the blowers. Sulfur burning equipment costs less. Maintenance charges and labor costs are less. Yet large plants are operating profitably with pyrites. The continual readjustments the industry has faced are strikingly outlined in the following data [45].

### Summary of Positions

1882 85% of acid manufactured from sulfur
1895 75% of acid manufactured from sulfur
1900 most acid produced from pyrites
1914 only 2.6% of acid from sulfur
1918 48: 28 ratio of sulfur to pyrites burned
1926 66% of acid manufactured from sulfur
1930 60-65% of acid manufactured from sulfur [46].

In considering the cost of an acid plant, the working rule is that a plant burning sulfur requires half the capital investment for materials and construction that would be necessary for a pyrites works of the same capacity. However, when pyrites may be obtained at a favorable price on a sulfur basis the additional margin of profit over a period of time is attractive. Where the net profit is thus enhanced, the earnings may justify the initial investment of capital in the more costly pyrites burning equipment.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### German Chemical Plant Exhibitors

A special Rubber Section of ACHEMA VII, (the German Exhibition of Chemical Plant which will be held in Cologne probably from 2nd to 11th of June, 1933), has been formed. While the ACHEMA VII is conducted by the German Chemical Engineering Organization DECHEMA (Deutsche Gesellschaft fuer chemisches Apparatewesen E. V., Head Office—Seelze b. Hannover), the Rubber Section, which will be open continuously during the months June, July, August and September, will be conducted by the Messe—und Ausstellungs—Ges. m.b.H., Cologne. The Honorary President will be Professor Hauser of Frankfurt on Main.

# The Chemical Markets of Asia

## *Japanese Research and Trade Conditions*

**By Charles E. Mullin**

OCCIDENTAL education was adopted by Japan in 1872 and today the schools are very similar to those of Europe and America. Primary education is quite universal and the usual subjects are taught. Co-education exists in only a few of the institutions of higher learning. As a whole, the schools appear to receive considerably more financial and other national governmental support than in America. There seems to be much closer cooperation between them and the native industries, even the very small home or domestic plants, than is found in America. In all parts of the Far East education and educators are held in far higher esteem than in America, and the faculty is constantly called upon to assist in solving the problems of the industrial plants, in the development and trial of new ideas, and for all sorts of technical and commercial information.

A peculiar feature of chemical research and the chemical industry in Japan is that although much of the research appears to be of high grade, the Japanese do not appear to be able to carry the results into the plant on large scale operations. Japan has made very few real contributions to either pure or applied chemistry, or to the chemical industries. Most of their efforts in the past appear to have been expanded upon imitating or, as they prefer to call it, "adapting," the foreign processes and machinery in more or less common use abroad, and in adapting these to the particular type of products in demand in the Japanese local and export markets, and to the types of raw material available.

It is reported that after years of research upon the manufacture of hydrosulfite, the actual "know how" was purchased in Europe before hydrosulfite was successfully manufactured in Japan. Although Japan is a very large consumer of synthetic indigo, even yet this is not produced upon a large scale successfully and economically in Japan. The same applies to many other chemical products. The Japanese seem to lack the ability to successfully carry their research results into the plant.

By far the largest and best plant for chemical and physical research in Japan is that of the Imperial Institute of Physical and Chemical Research in Tokyo.* Having just visited our famous Mellon Institute it was interesting to compare the two institutions. The set-up is quite different, in that the research at Mellon is conducted on the fellowship plan for the American industries, but in the Japanese Institute the research is in both pure and applied science, covering every phase of both chemistry and physics, and wherever possible the results and discoveries are carried through to the industrial or manufacturing stage by or for the Institute. Any monetary profits from the manufacture and sale of the products accrue to, and are used by, the Institute. In fact a separate company, known as the Physical and Chemical Industries Company, a subsidiary of the Institute, has been formed to manufacture and sell the products developed in the Institute. In some cases the processes, patents, etc., are licensed to Japanese manufacturers and industries, to the profit of the Institute.

The Institute of Physical and Chemical Research is a Japanese corporation, founded March 20, 1917, with an endowment of 5,726,500 yen Of this sum, 1,000,000 yen was an Imperial gift, 1,650,000 yen was a government subsidy, and 3,076,500 yen was contributed from official sources and individuals. The officials include H. I. H. Prince Hiroyasu Fushimi, Patron; Viscount Yei-ichi Shibusawa, Vice-Patron; Viscount Dr. Masatosi Okochi, President, who is in direct charge; and thirteen Directors, including four with doctor's degrees, the Vice-Minister of Education, and the Vice-Minister of Commerce and Industry.

*Second of a series of articles upon the chemical industries of Asia. Copyright and all other rights reserved by the Author.

*The Author is deeply indebted to the President of the Institute, Viscount Okoshi, for his courtesy and hospitality and for the information contained in this paper and to Prof. Dr. H. Nishida, of the Kiriu Technical College, who accompanied many of his travels in Japan and made these visits possible.

Five Auditors and a Consultation Committee of seventy members complete the list of officials. The staff, including subordinates and employees, numbers five hundred and seventy-eight.

The Institute is supported by investment revenues, an annual government subsidy of 250,000 yen, profits from the sale of its products, and other miscellaneous sources. The Income Statement and Balance Sheet for the year ending March 30, 1929, are given below, as well as the Budget for the year ending March 30, 1930. In connection with the Income Statement it is interesting to note that of the 833,962.26 yen revenue, the largest item, 350,870.83 yen is from profits on the sale of products and a further 46,875.43 yen is from royalties and other revenues. The income derived from the results of research is therefore 397,746.26 yen, or slightly less than half of the total income of the Institute in 1929.

**Income Statement (Year ending March 31, 1929)**

| | | |
|---|---|---|
| Revenue from investments | 186,216.00 | yen |
| Subsidy | 250,000.00 | " |
| Royalties and other revenues | 46,875.43 | " |
| Profit on sales of products | 350,870.83 | " |
| Total income | 833,962.26 | yen |

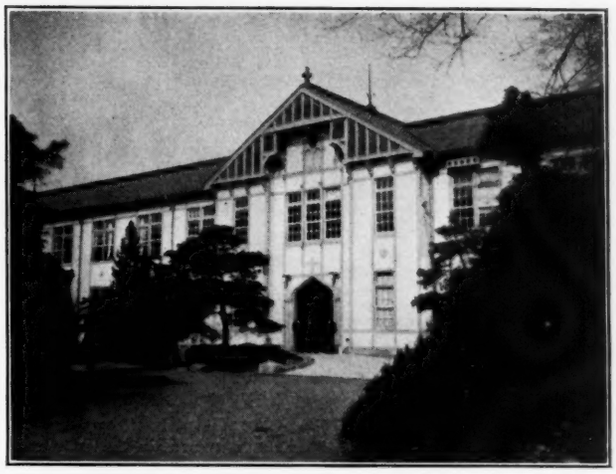
**Balance Sheet (Year ending March 31, 1929)**

| | | |
|---|---|---|
| *Assets* | | |
| Unpaid fund | 167,300.00 | yen |
| Investments | 1,591,639.00 | " |
| Land and buildings | 1,868,105.00 | " |
| Equipment, machinery, and furniture | 3,019,836.67 | " |
| Cash | 61,068.93 | " |
| Current assets | 436,357.52 | " |
| Total assets | 7,144,307.12 | yen |
| *Liabilities* | | |
| Fund | 5,893,800.00 | yen |
| Reserves | 1,085,182.69 | " |
| Surplus for the year | 165,324.43 | " |
| Total | 7,144,307.12 | yen |

**Budget (Year ending March 31, 1930)**

| | | |
|---|---|---|
| *Revenue* | | |
| Government subsidy | 250,000.00 | yen |
| Revenue from investments | 115,535.00 | " |
| Royalties and profits | 226,818.00 | " |
| Total revenue | 592,353.00 | yen |
| *Expenditures* | | |
| Administrative expense | 54,604.00 | yen |
| Research expense | 517,749.00 | " |
| Special expense | 20,000.00 | " |
| Total expenses | 592,353.00 | yen |

At present the Institute operates some twenty-two separate laboratories, most but not all of which are located on the premises in Tokyo. Certain of the laboratories are located in Tohoku Imperial University at Sendai, the Tokyo Imperial University, the Kyoto Imperial University, etc. Each laboratory is under the direction of a Chief Investigator, who works under the President, Viscount Okochi and is in complete charge, even to the ratio of salaries, equipment, and expenses in his own laboratory. They are all also perfectly free in their choice of research problems, no limitation whatsoever being placed on



*The Higher Technical School at Kiriu, under Professor Dr. Nishida, probably the most widely known Japanese chemist*

the sphere of their investigations, and according to my information some two hundred and eight separate investigations are in progress. These include a very wide range of subjects, some few of which are:

Chemical effect and catalytic action of the radiations from radioactive substances.
Photogalvanic cells and their applications.
The reduction of terpenes.
X-ray diffraction in liquids and solutions.
Photosensibility of thallium compounds.
The system consisting of sulfur dioxide, ammonia, and water.
Fluorine and its compounds.
The oxidation of the polythionates.
Studies on high-tension insulators.
X-ray analysis of crystals.
Drying and seasoning apparatus for industry.
Researches on the cutting resistance of metals.
On the manufacture of magnesium.
Researches on carbon dioxide under high pressure and its industrial applications.
Machinery for the chemical industry.
Separation of the rare metals.
Detection and separation of gallium.
On potentiometric titration.
On the viscosity of the vapors of organic compounds.
On the transmutation of elements.
On the utilization of natural gas.
On the chlorination of the esters of the aliphatic acids.
The synthesis 3, 7, 8, 4-tetraoxyflavone.
On the stereoisomerism of tellurium compounds.
On the synthesis of aromatic dicarboxylic acids and the formation of cyclic ketones.
Chemical studies on toad poisons.
On special reclaimed rubbers.
Studies on the hydrolytic splitting of oils, fats and soaps.
An economical method of concentrating dilute solutions.
On the dielectric properties of cellulose and its derivatives.
On the treatment of clays and the preparation of aluminum.
Solutions and gels of silicic acid.
On aromatic sulfur compounds.
Researches on the phosphatides occurring in soya beans.
On the synthesis of the flavors of fermentation products.
Catechin in green tea.
Derris root and its utilization.
On the utilization of camphor oil.
On the recovery of waste silk.

The completed investigations of the Institute are published in the *Scientific Papers of the Institute*, in a

European language, or in the *Bulletin of the Institute*. In some cases the results are also published in the domestic and foreign trade papers. Lectures are frequently given covering the investigations and results. About three hundred scientific papers and bulletins have been published and may be purchased from the Institute. About three hundred Japanese and about one hundred foreign patents have been granted covering the discoveries and are held by the Institute. As mentioned above, many of these are now operated, either by the Institute or under contract.

### Buildings

The Institute has an excellent location in Tokyo and the buildings are a credit to an institution of this type and far superior to those used for similar purposes in most countries. The largest building is of ferro-concrete construction, four stories, and houses nine separate laboratories, a constant temperature room, a materials testing room, a library, lecture room, dining room, and the main offices. It cost 502,004.32 yen.

Acetone, phthalic acid anhydride, and tetralin are produced experimentally, and rubber is reclaimed in a separate building, costing 30,660.56 yen. The Riken synthetic sake factory, the vitamine A plant, the Riken posiblue print paper and the daylight screens plants, and the animal experiment laboratory all occupy separate buildings. In all there are thirty-seven separate buildings, the last large one completed in 1925, but with smaller additions later, at a total cost of almost two million yen for the buildings alone, and about three and a half million yen for the equipment and ground, or about $2,750,000.00 U. S. gold. It should be noted that building costs are much lower in Japan than in America and it would be impossible to duplicate these buildings in America at anywhere near the above figures.

A rather unexpected, but probably quite profitable department of the Institute is the manufacture upon a rather large scale of scientific, mathematical, optical, and other physico-chemical precision instruments for sale. A large repair department for instruments and apparatus of this type, and an excellent glass blowing plant, are also maintained for commercial production. Some of the instruments manufactured for sale include: mercury vapor and cadmium lamps, the Doi refractometer, the Nagaoka microbarograph, a special electrical "charging rod," a galvanometer, an electroscope, surveying instruments, an electromagnetic chemical balance, a condenser transmitter, Akahira's electromagnetic "oscillo-cyclograph," a lathe tool dynamometer, Tsuji's photo-elasticity apparatus, piston rings, a piston ring tester, ultrazin eye glasses and light-filters, etc.

*The Applied Chemistry Building at Imperial University, Tokyo*

### Japanese Stress Research

Plant and equipment are a definite indication of the high esteem in which the Japanese government holds scientific research. Visitors cannot fail to be impressed with the amount and variety of research in progress. The arrangements for the utilization of the results of this research, through the small or semi-commercial plant, into actual factory production, if necessary in any by the Institute itself, should insure prompt and the best possible commercial applications, and the whole arrangement appears to be ideal, from the standpoint of the individual researcher, who receives a part of the profits from his discoveries.

Both chemical and physical research is also conducted in the Japanese universities and colleges, and particularly in the Imperial Universities. The author had the pleasure of visiting a number of these and was particularly impressed with the research at the Imperial Universities located in Sendai, Tokyo, and Kyoto. In some cases equally important work was in progress in certain of the Technical Colleges, as in Kiriu, Tokyo, and Kyoto. In fact all of the universities, colleges, and technical schools were engaged in chemical and other research of one kind or another, in many cases upon specific industrial problems.

In addition to this the government maintains several large special industrial laboratories for specific industries in many parts of the country. In Yokohama there is a very complete government laboratory for the chemical, textile, ceramic, and certain other industries. The textile division of this Yokohama laboratory is fully equipped with various types of spinning, weaving, knitting, dyeing, printing, and finishing machinery, as well as a staff of artists, with the very latest equipment and all the important style journals, etc., to assist the manufacturer in the development and design of both new patterns, styles, and types of fabrics and even ready-made garments for export. This laboratory is entirely separate and apart from any school or educational institution and its sole purpose is to aid certain native industries by expert advice and by supplying the plant, equipment, and personnel for the experimental and other development work necessary in the evolution of new or improved products, in effecting reductions in the cost of

production, etc. It is quite possible that the Japanese industries are receiving more government assistance in this way than those of any other nation at present.

It is difficult for those who have not visited the East to visualize the low standards of living in many parts of the Orient. Present standards of living and labor conditions in Japan are very slightly above those of the other eastern countries, but even so, they are still so far below average American conditions that it is difficult to compare them. This applies to the chemical industries just as much as to the others. The average wage of a Japanese day laborer is less than one yen a day and the yen is worth about thirty cents in United States currency. In Formosa and Korea the average daily wage paid to the natives of these possessions is about half a yen per day. In Japan, when they wish to reduce certain labor costs, Korean labor is employed instead of the more expensive Japanese labor.

### Apprenticeship Holds Sway

In many industries, especially those of the home or domestic type, the apprenticeship system still survives. In some cases the boy or girl is employed by the year at the rate of from thirty or fifty to as much as a hundred yen a year and "found." These yearly employees are usually from the country districts and live entirely upon very cheap vegetables, a little seaweed, and an occasional piece of fish. They sleep many in a room, on mats on the floor. It is stated that in many cases the poorer people in Japan exist on less than five sen ($0.015 U. S. currency at present) per day. The hours of labor are long but vary with the industry, locality, and type of plant. In the smaller or domestic plants, the hours are often from daylight until dark, or even beyond in the winter. Plant conditions, as a whole, are far below those in American or even European plants.

Obviously, with these low wages, the standards of living cannot be high. The diet consists of vegetables and, where it can be afforded, rice, soya beans and fish. Sea-weed, eels, and many things practically unknown in Occidental dietetics are widely relished and eaten by those who can afford them. Meat is seldom used in the laboring classes and soya beans, in many different forms, supply the needed protein for the diet. Many special sauces are used and these form a special branch of the chemical and food industries.

Occidental houses are practically unknown among the laboring classes and, indeed, are not common among the well-to-do. The average workman's home has only two or three rooms, about ten by twelve feet in size, and is built entirely of the lightest woodwork, with paper-covered windows and doors, instead of glass. The heating system consists of several large porcelain or metal jars in which charcoal is burned. There are neither stoves, furnaces, nor chimneys. On account of the extremely flimsy construction, fires are very common and the authorities insist upon the use of electric lighting wherever the current is available. This is the one modern feature in most Japanese homes. There are no beds, chairs, or other furniture, as we of the West know them. The bedding is spread on the floor and the tables, dressers, stands, etc., are less than a foot above the floor, so that those who use them may do so while sitting on the floor. In all but the poorest homes, the floor is raised considerably above the ground and is covered with straw mats. Wooden sandals are the rule and these must be removed when entering the home. Leather shoes must also be removed on entering a home or most offices and for this reason the native leather shoes are made with rubber "elastic" in the sides so that they may be easily slipped off.

*One of the main streets in the plant of the Imperial Institute of Physical and Chemical Research at Tokyo*

Japan offers a most interesting contrast of very modern and very old. The wages are so low that it is not economical to install labor saving machinery, yet in many plants the chemical processes used are the most modern. Yet this same plant may be practically without any of the machinery considered essential for economy of labor costs in America. Even in Toyko, with its very modern streets, theaters schools, etc., most of the sewage is still conveyed through the streets in buckets on shoulder yolks or push-carts.

It is not necessary to point out the difficulty of American manufacturers meeting the severe competition offered by the Japanese manufacturers. It is true that with our machinery and more intelligent labor, the American workman is able to turn out far more and better work than the average Japanese but he is not always able to turn out the twenty or more times as much work necessary to offset the lower plant investment, raw materials, labor, transportation, and other costs of the Japanese plants.

In spite of the low costs in Japan, the government and other technical assistance to the industries, etc.,

the Japanese industries are for several reasons in a bad position at the present time. The present world conditions have greatly decreased the demand for and prices of the Japanese raw materials so widely exported. For example, Japanese silk sold as high as about $28 per pound at one time during the war. The same silk was recently sold by the government at about $1.10 per pound. Of course this has greatly decreased the purchasing power of the native population. In the same way the lower prices of all Asiatic raw materials has greatly decreased the purchasing power of their export customers.

The depression has also increased the competition in the Japanese export markets and in the same way decreased the prices obtainable for export goods. The British and Continental manufacturers have studied the Asiatic export markets as never before and are in a better position to compete with Japan in the markets she largely gained during the war. This applies to all other products as well as to those of the chemical industries.

The Chinese boycott has had a very, very serious effect upon the Japanese business. China and the Chinese in other parts of the world were Japan's biggest customers. Practically all of this trade has been lost, perhaps only temporarily, but for the present many of the plants catering to this particular export trade are entirely closed down. In a few cases some of these plants have "adapted" certain well-known foreign brands, chops, and trade-marks, and are able to sell their goods to the Chinese as the products of European or American plants. Such practices are more or less common in several Eastern countries but are probably more prevalent in Japan than anywhere else in the world.

### Period of Unrest

Quite aside from all of these depressing factors in the industrial situation, Japan is not only very heavily in debt but is supporting one of the largest armies and navies in the world, entirely due to the control of the government by the very arrogant and domineering military group. For this reason all business is subject to one of the world's heaviest tax burdens. The military party is in full control at present and there are those who say they have usurped or seized the power of the Mikado himself. The majority of the level-headed business men are not back of all of the acts of this governmental group, but many fear to express their actual sentiments. The press is under rigid censorship and many important events are not published. This was especially true in connection with the Manchurian and Shanghai episodes.

Obviously, this condition is not healthy and Japan is seething with fascism, communism, socialism, and a lot of other ism troubles. More than one plant is surrounded by barbed wire entanglements and armed guards, and strikes, labor troubles, etc., have been and are quite common. All kinds of rumors are abroad regarding revolution, seizure of the government by certain groups, etc. Communism has been made a crime against the crown and, I understand is punishable as treason. It has gained quite a foothold among the students, among whom the agitators have been particularly active and quite a few of the sons of nobility have been caught by the law. The whole political situation is unpleasant, as recent events have shown, and has a serious effect upon the industries. Many foreigners in Japan predict an "explosion" within the next two or three years. It has been stated that a foreign war is the one thing that will cement the nation, and that Japan's activities in Manchuria and Shanghai are the first step in this direction. It is quite certain that every effort is being made to popularize this military aggression with the masses and the business interests, both of which are not yet even lukewarm on the subject, for many very good reasons.

### American Opportunities

The whole Japanese political situation is bad. The former Chinese market for Japanese goods is open to any who are ready to take it. Just at present the Chinese are exceptionally friendly, both to Americans and American products. They feel that they have had the sympathy of both the American government and public in their recent troubles, more so than from any other nation. They believe that American products, chemical and otherwise, are good but expensive, and they are ready to buy American goods if the price is right under the present very adverse exchange levels. Never before have American products had as good an opportunity nor as friendly a reception in the Chinese markets as today. One of the most frequent questions I have been asked in China has been, "Why are we not offered more American goods suited to our needs and pocketbooks?" The market is certainly large enough to warrant detailed study and the development of a special grade of products to meet the particular demands of the more than four hundred million possible customers in China.

## *Equipment Bulletins*

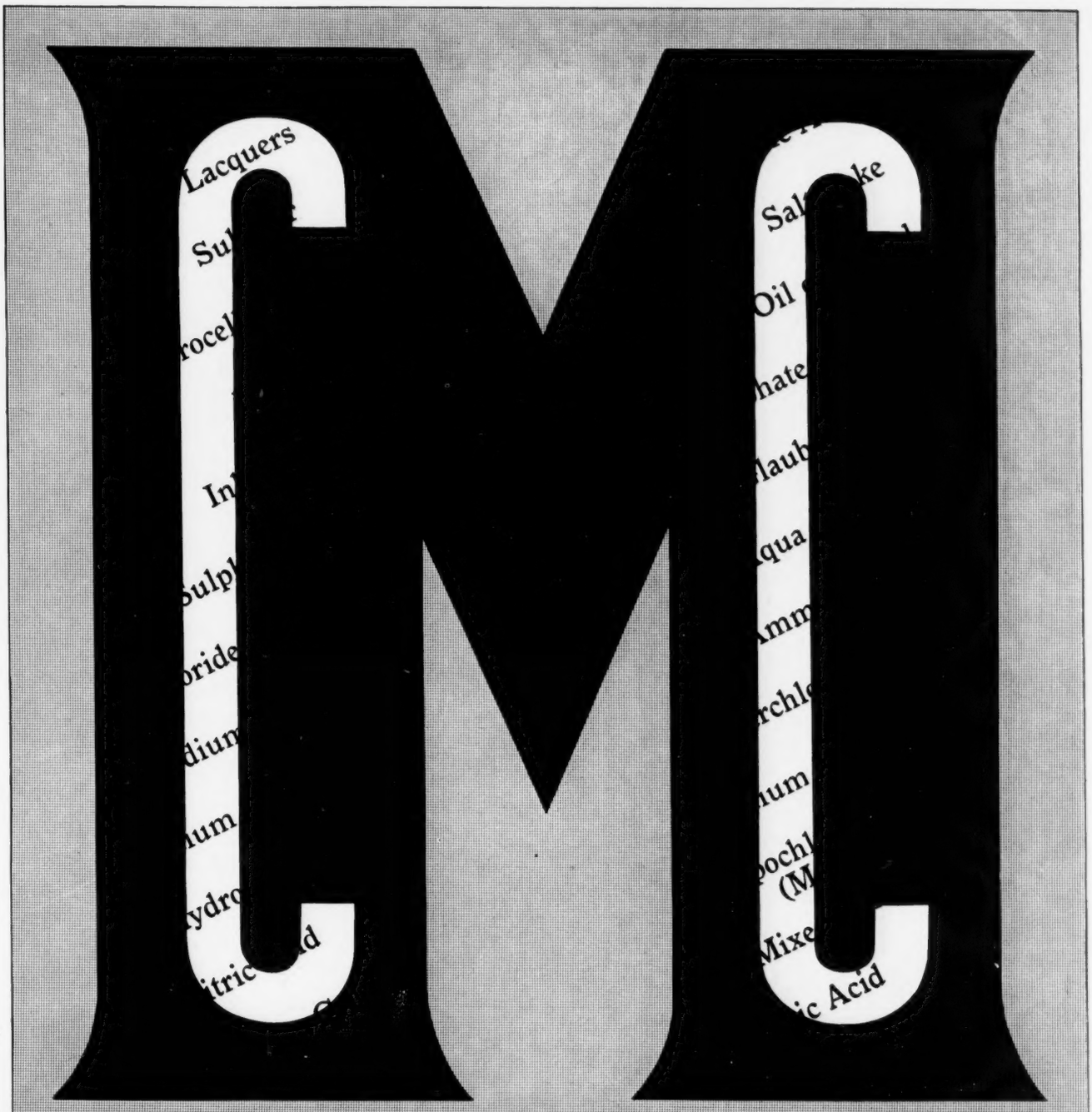
Acheson Oildag, Port Huron, Mich. A 25-page booklet describing colloidal graphite—its properties, uses and advantages as a lubricant

American Instrument Co., 774 Girard St., N. W. Washington. Two leaflets announcing an improved Saybolt Type Viscosimeter, and the Vogel-Ossag Viscometer for the direct measurement of kinematic and absolute viscosities.

B. F. Goodrich Rubber, Akron, O. New information on hard rubber in sheet, rod and tubing form is contained in a new booklet issued by the Chemical Division of the company.

Among subjects in the booklet are: "Properties of Goodrich and Defiance Hard Rubber Goods," Resistance to Chemicals," "Machining Qualities," "Finish and Tolerances," "Possible Variations," "Suggestions for Machining," and "Weights."

Industrial Pyrometer Co., 343 Mentor Ave., Painesville, O. A four page leaflet introducing the K. & S. pocket radiation pyrometer.

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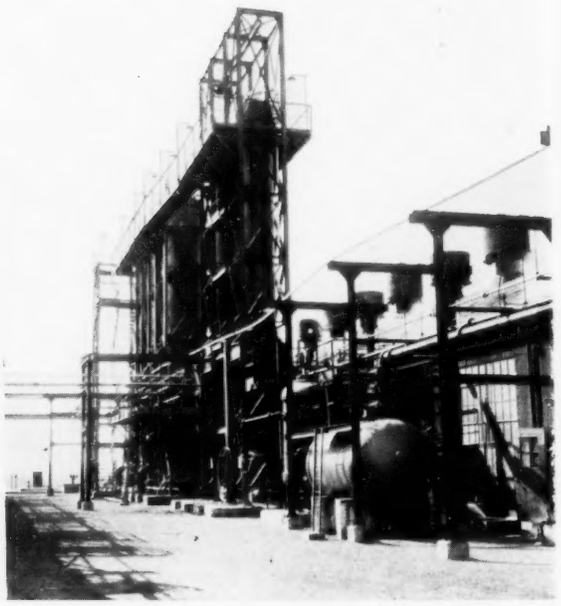
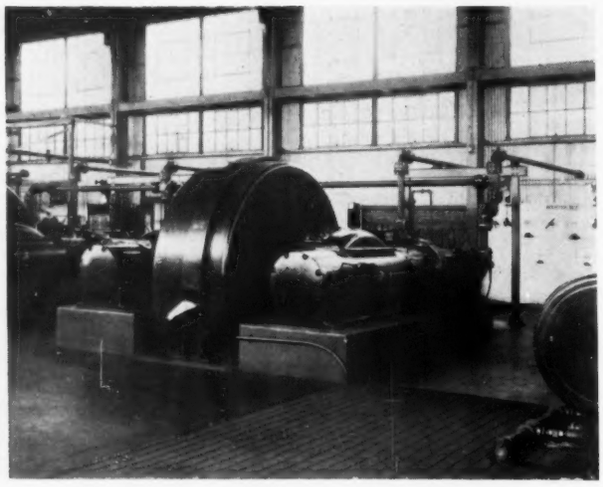
# CHEMICAL

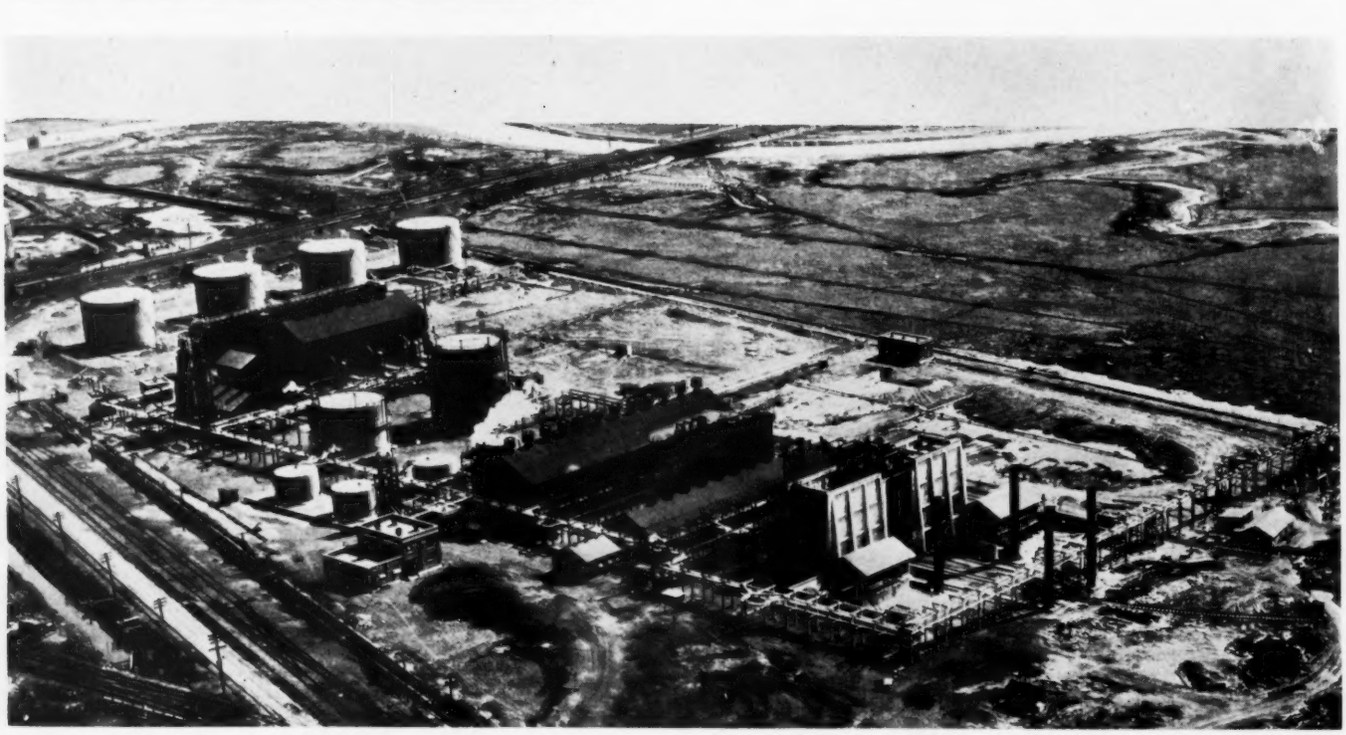
## The Photographic Record

*Standard Oil interests are now ready to employ hydrogenation commercially. "Essolube," a new hydrogenated lubricating oil, solvents for the lacquer, paint and plastics fields, kerosine, benzol, and a new aviation gasoline, are the products scheduled for large scale operation*



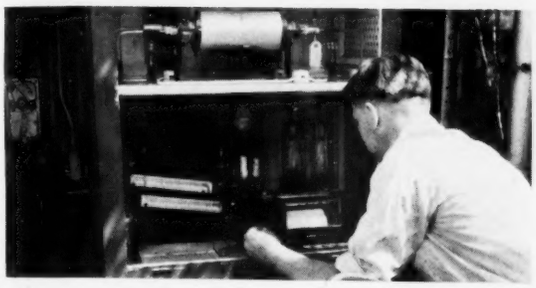


*Below, an aerial photograph of the Bayway plant. Roughly the plant may be divided into three divisions: to the extreme left, the section devoted to the production of hydrogen; center, the section housing the large compressors; right, the reaction chambers guarded by stout concrete walls. At the left a view of the compressors, and above, the scrubbing tower cleansing hydrogen free from carbon dioxide*

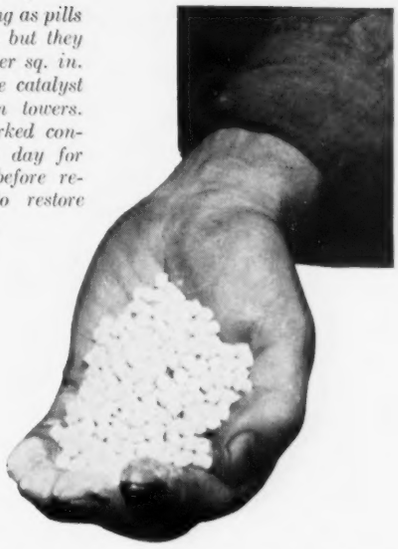


# NEWS REEL

## of Our Chemical Activities



*The Hydro plant's "police department." Hydrogen and oxygen are the characters to be watched. Individually they are useful citizens, but together in the right proportions they can wreak havoc. Hydrogen coming from the compressors is tested continuously in this special device*



*Right, innocent-looking as pills and lumps of sugar, but they boss a 3600-pound per sq. in. process. Here is the catalyst used in the reaction towers. The first supply worked continuously night and day for more than a year before requiring treatment to restore its activity*

*After an investment of $25,000,000 and five years of intensive research Standard interests have answered the pertinent question, "Of what practical commercial use is the hydrogenation process." Operating officials at Bayway are confident that it is possible to produce hydrogenated products on a price basis at least equal to that of products made by the older refining methods. They do not claim, however, that they can be made radically cheaper. The hydrogenation process at the moment does not offer any serious challenge to existing cracking processes, at least for the life of such plants, unless still further economies are effected in the hydrogenation field. The process, because of its extreme degree of manufacturing flexibility, will serve to supplant existing refining equipment. Unusual demand for a particular product can easily be met by the Standard Companies with the two hydrogenation plants now in operation. The recent five months run on kerosine at the Bayway plant served to demonstrate the value of this feature of the process. The marketing organization of the Standard Oil is capitalizing on the public's interest in hydrogenation, featuring "Esso-lube" as a "hydrofined" product. Right, the "heart" of the hydrogenation plant—an interior view of the reaction chambers. Here the crude oil-hydrogen mixtures react under terrifically high temperatures and pressures*

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**Since the war, we have seen two radical changes in the method of determining valuations in the balance sheet, and this simple statement of ways and means, written by an accountant in the layman's language, is quite as useful as it is interesting.**

# *Values*
## *in the Balance Sheet*

**By Charles B. Couchman**

**President, American Institute of Accountants**

MANY business men seem uncertain as to the basis of evaluation of assets on financial statements. Some appear to have the erroneous idea that balance sheets are intended to display values on the realizable basis; in other words, the amount the assets would bring if sold. Others have other equally incorrect ideas as to how balance sheet values are determined. Because of such misunderstandings, it seems desirable to recapitulate the methods of valuation sanctioned by present day accountancy.

It should be understood clearly that balance sheets are displayed on the basis of "going concern" value. They do not purport to present amounts which could be obtained by forced realization, nor do they pretend to represent value which might be realized under any other unusual conditions. The simplicity that originally characterized such statements has become complicated by the introduction of new elements less easily determined, and by arbitrary rules and conventions. For simplicity's sake, the bases of valuation may be classified roughly into three groups:

1. Historical Records.
2. Conventional Modifications.
3. Official Authorizations.

Historical Records—The fundamental method of determining the value of accounting elements is through the accumulation of historical data. Every item entering into the calculation must be supported by documents or records acceptable as *prima facie* evidence in law. Each element is the result of a transaction to which the organization is a party—a purchase, a sale, a payment or the like. The amounts paid or to be paid, or received or to be received, in full satisfaction of each transaction, if expressed in terms of the national currency, constitute definite bases for valuation in the records.

A corporation purchases a machine for $1,000. That becomes the proper valuation of that machine upon the corporation's records as at the date of purchase, and would be included at that amount in the machinery item upon a balance sheet. The corporation sells an item of merchandise for $100 on credit terms. This results in a legal claim for that amount upon a debtor, and at that date would be included in this amount among the accounts receivable on a balance sheet. In cases of this character, the monetary measurement for each item is set in a contract to which one of the parties concerned is the corporation. The majority of balance sheet items come under this classification.

An apparent exception to the three classes of values here noted is the inventory. In many cases, this is not accumulated through complete historical records, but, instead, is determined at stated intervals by the method of physical count or measurement. In organizations where complete inventory records are kept, the count or quantity is determinable historically. Unfortunately, there are many organizations which do not maintain such records. In these cases, the verification of quantities cannot well be confirmed at a later date.

Conventional Modifications—If the historical basis of valuation were the only one used in financial statements there would be little cause for confusion or uncertainty. It is equally clear, however, that such results would be far from satisfactory and would fall short of displaying the information which business requires.

It is evident that the values pertaining to many commercial assets are affected by causes other than transactions or contracts. Among these are elements of time and use. The machine referred to in a foregoing illustration may have been valued properly at $1,000 at the time of its acquirement, but there will come a time when it will have to be discarded or replaced and will have no worth greater than its recoverable value. If engineers estimate that ten years will end its usefulness to the corporation and that it will then have a recoverable value of $100, it is evident that the net cost to the corporation for the ten years' use of the machine is $900. Since one of the functions of financial records is to allocate costs as well as income

to the pertinent years, it is considered desirable to apportion the cost of this machine to the expense accounts of the years during which it is useful. If this be done by what is called the "straight line" method, $90 will be transferred each year (usually through an account known as Reserves for Depreciation) from the book value of this machine to the proper expense accounts.

This marks a modification of the method first described above. This $90 entry is not supported by contract or other legal document. It is an estimate only, and does not classify under provable facts. Similarly, at any date, reserves may be entered on the financial records, measuring estimated loss on the collection of various classes of receivables. Again, these do not result usually from financial contracts. Seldom are such entries supported by legal documents. The amount of the reserve ordinarily is an estimate, the accuracy of which is not determinable from proved facts.

A convention attaching to such adjustments of asset value which come under this general heading, is that known or reasonably expected losses in the assets should be recognized by proper adjustment of the values for balance sheet purposes; whereas known or expected gains should not be recorded until they become actual through realization in cash or legally enforceable choses-in-action. The wisdom of this conservatism in practice has been demonstrated almost beyond cavil.

Among the types of accounting adjustment coming under this heading, there is one that deserves some special consideration. This is the commonly accepted practice of using "market price" as measurement of values for securities and "the lower of cost or market" as the measure for inventories. In this type it will be noted that the determining value may not be the result of a contract or transaction in which the corporation whose accounts are displayed has been a party, but, instead, may be a transaction between other parties wholly unrelated to this corporation. This type of valuation marks a wide divergence from the basic rules governing the class of records discussed under the first heading.

Official Authorizations—The general purpose of the adjustments discussed under the previous heading is to reflect at the end of any accounting period the estimated losses in asset values that have occurred during that period.

Frequently, adjustments of asset values are made as the result of specific authorizations. Usually, in corporations, these authorizations are made by action of the Board of Directors. One type of entry under this heading is the recording for plant and equipment of a value resulting from appraisement in lieu of the historical record, which is on a cost basis. Where such an appraised value is used, published statements should make clear the basis of valuation. This type of entry was made very frequently in those years of inflation when an appraised value, usually upon a reproductive basis, resulted in a much higher figure than was shown by the cost basis. At the end of 1931, there seems to have been a marked reversal of viewpoint by many managements, resulting in a tendency to authorize the writing-down instead of the writing-up of valuations for such fixed assets.

Valuations displayed as a result of specific authorizations differ greatly from those resulting from historical records or from the conventional adjustments due to time and use, as discussed under the second of the foregoing headings.

Another valuation fixed by authorization is found in the case of assets acquired by the issue of stock with no par value. In such cases the Board of Directors frequently specifies the amount at which the assets on the one hand, and the capital stock on the other hand, shall be recorded in the financial books. Corporations organized under the laws of States which allow such procedure, frequently apportion the proceeds from the issue of no par stock into two classifications, one to be recorded as the amount of stated value for capital stock; the other to be recorded as paid-in surplus or capital surplus.

In the two illustrations just given, the records are the result of actual financial transactions, but the amounts to be displayed under specific headings in the records and financial reports may be determined by specific authorization rather than by the documents evidencing the transaction itself. This third basis for valuation, namely, the basis of Official Authorization, covers the amounts appearing as the valuation set for numerous items appearing in financial statements. Among these may be mentioned the amounts of expenses definitely deferred from one period to later periods, such as pre-operating expense, development expense and the like.

There has been no attempt in this brief article to go deeply into the subject of valuation as used in financial statements, nor to give the arguments for or against the various methods mentioned. Nevertheless, the various bases of valuation commonly appearing have been summarized. The inspection of a balance sheet of any large corporation will disclose illustrations of each group named. The majority of the items will be based upon historical records wherein each is supported by valid records or documentary evidence. The various reserves appearing usually will be the result of applying standard rules of modifications, such as reserve for depreciation, reserve for bad debts and the like. In nearly all such balance sheets there will appear some item the amount of which has been fixed by official authorization. Usually in connection with these, there should be some disclosure with regard to the authorization. As an illustration, if some fixed asset is displayed at an appraised value, instead of at cost, that fact should be indicated.

# The Non-flammable Chlorine Solvents from Ethane and Ethylene

| NAME | DICHLOR-ETHYLENE | TRICHLOR-ETHYLENE | PERCHLOR-ETHYLENE | TETRACHLOR-ETHANE | PENTACHLOR-ETHANE |
|---|---|---|---|---|---|
| **Formula** | $C_2H_2Cl_2$ | $C_2HCl_3$ | $C_2Cl_4$ | $C_2H_2Cl_4$ | $C_2HCl_5$ |
| **Molecular weight** | 96.9 | 131.4 | 165.8 | 167.8 | 202.3 |
| **Boiling point, 760 mm.** | about 52 deg. C. | 87 deg. C. | 121.1 deg. C. | 146.2 deg. C. | 162 deg. C. |
| **Vapor pressure at 20 deg. C.** | 205 mm. Hg. | 56 mm. Hg. | 17 mm. Hg. | 11 mm. Hg. | 7 mm. Hg. |
| **Specific heat at 20 deg. C.** | 0.270 | 0.223 | 0.216 | 0.268 | 0.266 |
| **Latent heat (calc.)** | 71 cal. | 56.59 cal. | 51.59 cal. | 54.43 cal. | 43.64 cal. |
| **Coefficient of expansion** | about 0.0013 | 0.001193 | 0.001078 | 0.000998 | 0.000909 |
| **Freezing point** | —— | —73 deg. C. | —19 deg. C. | —36 deg. C. | —22 deg. C. |
| **Specific gravity, 15 deg. C.** | 1.278 | 1.476 | 1.624 | 1.6011 | 1.685 |

SINCE 1903 the manufacture of chlorine derivatives of ethane and ethylene from chlorine and acetylene, has been carried out on a large scale. These chlorine derivatives form a valuable series of non-inflammable solvents whose boiling points range from about 52 to 159 deg. C. The physical constants of the series are shown in the accompanying table which is taken with the following description from a recent bulletin prepared by the Imperial Chemical Industries, Ltd.

Other anhydrous solvents commonly used for dissolving or extracting oils, fats, waxes, resins, etc., and for dry cleaning, are inflammable and liable to cause fire and explosion. Elaborate precautions are necessary to minimize these risks, but they can never be eliminated. Vexatious restrictions are imposed upon the storage and transport of inflammable materials, and the premium for fire insurance of works using them is very high.

### The Ideal Solvent

These disadvantages are avoided by the use of the chlorine derivatives of ethane and ethylene, which moreover, possess in a marked degree the essential qualities of the ideal solvent.

Commercial dichlorethylene is a mixture of two dichlorethylenes which are stereo-isomers. Trichlorethylene and perchlorethylene are pure substances. They do not leave a residue, neither do they leave an "after smell." Pentachlorethane usually contains a trace of hexachlorethane, but is otherwise pure.

Dichlorethylene, trichlorethylene and perchlorethylene are stable except when exposed to sunlight, and may be used in contact with all common metals, even in the presence of moisture, although it is advisable to galvanize iron or steel vessels to avoid difficulties due to rusting. Tetrachlorethane and pentachlorethane are stable in the absence of moisture under ordinary conditions. In the presence of moisture they are stable in contact with lead and tin, but other common metals reduce them to dichlorethylene and trichlorethylene respectively.

### Efficient Extraction

The boiling points of the members of this series range from about 52 to 159 deg. C., a range the amplitude of which is not approached by any other group of solvents. Their rapidity of penetration is most marked, and the rate of solution of substances is very high, thus permitting very efficient extraction. Reference to the table of physical constants will reveal their low specific and latent heats. These qualities make them readily volatile. They are very easily condensed, but dichlorethylene requires a very well-cooled condenser on account of its low boiling point.

They are non-inflammable (with the exception of dichlorethylene), non-combustible and non-explosive. The liquids may in fact be used to extinguish fires. The hot vapors of dichlorethylene can be ignited and will burn with a cold flame; but this will extinguish itself and there is consequently no risk of fire.

There are no restrictions upon the storage or transport of these solvents, and fire insurance premiums are not increased by their use.

The hygiene of works using solvents is very important, as it has been shown that coal tar solvents, petroleum solvents, carbon bisulfide, acetone and chlorine solvents are all dangerous to health unless proper precautions are taken. The most important of these is to prevent as far as possible the escape of vapor into the air; the next is to provide efficient ventilation.

### Removal of Risks

The vapors of chlorinated solvents are heavier than air, and should be removed whenever possible at the point at which they are produced. Where this cannot be done, removal should be effected by downward displacement, using suction fans situated either in the wall at floor level or in ducts under gratings in the floor. At the same time care should be taken to provide air inlets of sufficient area in the opposite side wall.

Chlorinated solvents when used in properly ventilated buildings, are perfectly safe. If, however, their vapors are breathed continually men may be affected, and there is a danger that constant inhalation of tetrachlorethane may cause toxic jaundice, but it is found that men vary greatly in their susceptibility to solvent vapors.

The chlorinated derivatives of ethane and ethylene are similar to chloroform in their tendency to induce intoxication and sleep when inhaled, although a large quantity is generally necessary to produce these effects.

### Dichlorethylene

Commercial dichlorethylene does not possess a constant boiling point, since it is a mixture of two dichlorethylenes which are stereo-isomers. One of these boils at 48 deg. C. and the other at 60 deg. C. The specific gravity of the mixture is about 1.278 at 15 deg. C.

The hot vapors of dichlorethylene can be ignited, but they burn with a cold flame which will extinguish itself. In practice it is found that there is no danger from fire in its use. Like its most important relative, trichlorethylene, it is very stable and may be used in contact with all the common industrial metals and even with dilute alkalies.

Dichlorethylene is an excellent solvent and is now used with marked success in place of low-boiling, highly inflammable solvents.

In the perfume industry, it is used for the extraction of delicate perfumes, whose odors would be completely changed by too high a temperature. For rubber, it is the best solvent known.

In the laboratory it is rapidly replacing ether for organic preparations because it is much less dangerous to use; it is much more easily dried, since water is only very slightly soluble in it; the yields obtained are as good as with other solvents, and in some cases better.

### Trichlorethylene

Trichlorethylene is a pleasant-smelling liquid of sp. gr. 1.47 and boiling point 87 deg. C. It is the most important member of this group of non-inflammable solvents, and most nearly complies with all the demands made on the ideal solvent.

The commercial product is a pure substance, whose boiling point range lies with 1 deg. C. There is no high-boiling residue left behind in the material extracted, so that the last trace of solvent may easily be removed.

Trichlorethylene does not attack the common metals even in the presence of moisture, and there is no difficulty in constructing plant for its use at a reasonable cost. Because of its powerful solvent action it quickly removes protective grease films from metal surfaces. Iron and steel surfaces are cleaned so thoroughly in this way that, on exposure to air, they are liable to rusting. To avoid this it is better to galvanize the surfaces of iron or steel containers. It is a very rapid worker, and may be used for the extraction of either moist or dry materials. In comparison with benzene, in the same apparatus, it yields a larger output in a given time.

It is non-inflammable and has a low latent heat of evaporation. It is heavier than water, and therefore may be kept under water to prevent evaporation. It should not be unduly exposed to light, nor should it be allowed to stand in open vessels.

Trichlorethylene is used today in large quantities in the extraction industry. Its purity makes possible the extraction of delicate fats without damage. It is also largely used for degreasing.

It is used for the solution of many resins, tarry and bituminous products, india-rubber and many organic substances, sulfur and phosphorus.

Its valuable cleansing properties have led to its extensive use for dry cleaning, where its non-inflammability is greatly appreciated; also to its incorporation with soap in laundry and scouring preparations.

Trichlorethylene is used in the preparation of Toilet Westropol, a solvent soap which is very useful to engineers, motorists and the housewife. Westropol is an ideal dirt and grease remover, and is at the same time a powerful disinfectant. It does not contain any injurious chemicals.

### Perchlorethylene

Perchlorethylene is a liquid of sp. gr. 1.624 and boiling point of 119 deg. C. Like trichlorethylene it does not attack metals even in the presence of moisture, but iron or steel containers should be galvanized, and as a solvent it possesses similar properties.

The pure substance is more expensive than trichlorethylene, but where a solvent is required which is less volatile than trichlorethylene but has the same properties, a mixture of trichlorethylene with 50 per cent or more perchlorethylene is suitable. Such a mixture does not possess a constant boiling point as is the case with the individual solvents and its composition may change on evaporation, due to the quicker removal of the more volatile trichlorethylene.

Perchlorethylene is useful for dry cleaning and for the manufacture of solvent soaps.

### Tetrachlorethane

Tetrachlorethane, like its derivatives, is non-inflammable. It is the parent substance of the chlorinated derivatives of ethane and ethylene, and is the most powerful solvent of the whole series. It dissolves oils, fats, waxes, resins and tarry substances; also sulfur, phosphorus and chlorine.

### Solvent for Cellulose Acetate

It dissolves one per cent of sulfur at ordinary temperatures. The solubility increases as the temperature rises, until above the melting point of sulfur the two substances are miscible in all proportions.

It is used as a solvent for varnishes, especially cellulose acetate, and in the preparation of paints; as a paint remover, and to a large extent as a solvent for all kinds of organic products. Tetrachlorethane is a toxic substance and should only be used for these purposes in specially designed plant. If this is not possible then either trichlorethylene or perchlorethylene should be used instead.

It distills without decomposition, and may be steam distilled quantitatively from all its mixtures. It should be noted that, though dry tetrachlorethane does not attack the common metals, only lead and tin are free from attack in the presence of moisture.

As stated above, tetrachlorethane is toxic, and special hygienic precautions should be observed in its use.

### Pentachlorethane, $CHCl_2$:$CCl_3$

Pentachlorethane is similar in its chemical and physiological properties to tetrachlorethane, and is sometimes used to replace it where a higher boiling point and lower volatility are desired. It has a specific gravity of 1.685 and a boiling point of 159 deg. C. Pentachlorethane is toxic and due precautions should be observed.

The isolation of animal and vegetable oils and fats is effected in the following ways:—

1. By melting either by direct heat or by boiling with water or steam.
2. By expression.
3. By extraction.

In all three processes it is necessary to rupture the walls of the oil-bearing cells. This is done *in situ* by heating in the first process, while for the second and third processes, especially when treating seeds and fruit, a preliminary crushing of the material is customary, and is very important if the maximum yield of oil is to be obtained.

### Extraction of Oils

The process of expression is carried out by means of hydraulic presses. The expressed oil flows away, and the residue—press cake—will contain from 4 to 12 per cent of oil, which means in many cases, a loss of 10 to 25 per cent of the original oil content.

The process of extraction was devised in order to reduce the loss of oil in the press cake by the older process. The repeated extraction of the material by a volatile solvent, which is continually recovered by distillation and used again, is simply the laboratory method, and is the most rational where a maximum yield of oil is the primary object. Many forms of extraction plant have been devised, all of which are founded on the Soxhlet apparatus used in the laboratory.

The history of extraction by means of volatile solvents dates back to 1856, when Deiss first used carbon bisulfide for oil extraction in a special plant. A simplified plant was introduced by Deiss in 1861. In 1864 benzene was first used commercially as a volatile solvent for oils, fats and waxes by Irwine, Richardson and Lundi, and after that the use of volatile hydrocarbons for oil extraction became general, since, in comparison with carbon bisulfide, they are much less inflammable and less explosive, and there is less contamination of the fat.

In 1903, when trichlorethylene was first placed on the market, its superiority as a solvent was at once recognized on account of its non-explosive and non-inflammable properties. Since then it has been successfully used for oil extraction, and it is now of great importance in the industry. During this period improvements in its manufacture have been made, and trichlorethylene, as now supplied, is a pure substance which boils over a range of 1 deg. C.

In order to obtain maximum efficiency in the extraction of solids by trichlorethylene, the material to be extracted should be in the form of thin plates, flakes, shavings or threads, in order that the maximum surface may be presented to the solvent together with a minimum thickness of the material. Powdery, sandy, sticky, glue-like or plastic materials are unsuitable for extraction, and should be mixed with an inert substance in order to make the mass more penetrable. Removal of the air from the mass and from the pores of the material is also necessary for rapid extraction, and in some cases it has been found advisable to evacuate the extraction vessel before admission of the solvent.

### Plant Design

The design of the plant is also important, as it has been found that where means are provided for rever-

sible circulation of the solvent better extraction takes place, and channelling is avoided.

The rate of solution in trichlorethylene increases with the temperature, so that most extractions are carried out with the aid of heat. The most suitable temperature for the extraction of an oil-bearing material can only be found by trial, and by comparing the qualities of the oils produced at the respective temperatures.

It should be noted that in the press process extraction also takes place, the oil itself acting as a solvent. The oil dissolves non-fat impurities, e.g., mucilage and albumen; especially at high pressure and under the influence of heat.

In the extraction process where two solvents are dealt with, namely, the trichlorethylene and the oil, the trichlorethylene prevents the extraction by the oil of these non-fat impurities.

### Diffusion of Oil and Solvent

Extraction consists of diffusion of solvent on the one hand and oil on the other, and as diffusion proceeds more quickly if the solvent is constantly removed, it is better to use small quantities of trichlorethylene often, rather than large quantities less frequently.

Generally speaking, it is not economical to remove the last ½ to 2 per cent of oil from the residue.

Extracted oils are refined in the same way as oils obtained by expression, either by charcoal or silicates.

As extracted oils can now be obtained free from the last traces of trichlorethylene without undue heating and consequent damage, they may be safely used in the manufacture of foodstuffs. The meal residue is also easily freed from the last traces of solvent, and is used in the preparation of compound meals and cattle cakes.

Oils and fats are obtained from a wide range of materials. Oils may be obtained from castor oil cake, and from fish meal; fats from bones, from the residues obtained in slaughter-houses, and from condemned animal carcasses. In these cases extraction gives valuable by-products, and is therefore rapidly superseding the older methods.

For oil and fat extraction, trichlorethylene is an ideal solvent.

"Dry cleaning" involves the immersion of the goods to be cleaned in a liquid which dissolves fat without saponification or emulsification.

A healthy skin exudes fat, so that clothing may become soiled simply by rubbing with the hand. Fat so brought into contact with clothing acts as a binding agent for dust, soot, fibres, and the like, which serve as a breeding ground for bacteria. In dry cleaning these bound impurities are removed with the fat just as they are when the goods are washed, but with this difference, that dry cleaning operates without damage to the fibres, colors and finishing materials, and removes the fat unaltered, whereas in washing with soap and alkalies it is saponified and emulsified.

### Dry Cleaning

Dry cleaning with benzol was introduced in the middle of the nineteenth century, and later petroleum benzine was also used. Non-inflammable solvents are rapidly displacing both these materials.

Where open machines are used with inflammable solvents there is continued danger of fire and explosion, even with good ventilation. Enclosed machines are sometimes used to reduce losses and minimize the fire and explosion risks, but at one stage, where the goods, after centrifuging, are transferred to the drying room, the risks are always very great.

Fire and explosion, which mean danger to workmen and buildings, may be avoided entirely by the use of trichlorethylene.

The economic advantages of the use of trichlorethylene for dry cleaning are evidenced in more efficient recovery of the solvent and in reduced steam consumption.

Goods after cleaning contain a large quantity of solvent, which is removed by centrifuging and final drying in heated chambers operated under reduced pressure. The vapors from the drying rooms are recovered in the most modern plants.

The solvent recovered from the washing machines and centrifuges is allowed to settle, and is then filtered in order that the clear solvent containing fat may be separated. In some cases this is used again without purification. Purification of the contaminated solvent is preferably carried out by distillation.

### Distillation Process

The distillation process is carried out either by wet steam or by indirect heating. The former method has the advantage of removing the last trace of solvent from the residue. Where a reasonably dry residue is desired, free also from solvent, the greater part of the solvent is removed by indirect heating, the last trace being removed by a jet of live steam.

Where a constant stream of goods is passing through a dry cleaning works, the distillation residue is obtained in marketable quantity, and may be sold for use in the manufacture of cheap greases and soaps.

Dry cleaning plants are now marketed which are specially designed for use with trichlorethylene.

Degreasing means the removal from a material of oils and fats; and this is to be distinguished from oil and fat extraction, which has for its primary object the production of oils and fats.

### Degreasing Textiles

Degreasing with volatile solvents, therefore, is a form of dry cleaning applied to articles other than clothing, and oils and fats recovered in the process are regarded as by-products.

The process of degreasing is carried out in the woollen trade, in the tanning industry, in printing establishments, in the electro-plating industry, and in works where rags saturated with oils are accumulated in quantity.

The most suitable volatile solvents for use in degreasing are those that are non-inflammable and act rapidly. Trichlorethylene is the ideal solvent for this purpose.

In the woollen trade it is claimed that by degreasing raw wool with a volatile solvent, there is a more perfect cleansing of the fibre, the wool fat is recovered in a pure state, the potash salts are more easily recovered, and all subsequent operations in the manufacture of woollen goods are improved, giving a better feel, appearance and durability.

The degreasing of raw wool is an important process in woollen manufacture in America, where it has been used with marked success for over twenty years.

### Degreasing Leathers

The degreasing of woollen piece goods gives a better finish than that secured by the scouring process, with a great saving in soap, and prevents the growth of mildew.

In the tanning industries difficulties are encountered with hides that contain an excess of natural fat in isolated spots. This causes staining and unevenness in the feel of the leather. The bad spots must be cut out and sold as low-grade leather. By degreasing the hides, these difficulties are obviated and fats are recovered. Degreasing is applied particularly to light hides from sheep, goats, lambs and kids.

In the engineering trade, the degreasing of metallic parts of all kinds is extremely important. To take a few examples, painting and electro-plating can only be successfully carried out on metals that are perfectly clean and free from grease; a proper inspection of machinery dismantled for overhaul can only be efficiently conducted when all grease and dirt have been removed; and printing rollers and blocks in time become choked with a mixture of dirt and oily ink which must be removed. In order to deal with problems of this and a similar nature, simple yet efficient degreasing plants have been designed, making use of the strong solvent action of trichlorethylene. These plants are available covering a range of models which are applicable to degreasing problems of every kind, and have been proved to be both simple and extremely efficient.

Cotton and woollen waste and rags of various kinds are used in large quantities by mechanics for absorbing oil. Formerly the dirty waste and rags were burnt. Trichlorethylene is now used for degreasing these cleaning materials, which are thus made fit for further use, and the oil recovered. Considerable economy is effected in large engineering workshops, for example those of the railway companies, where this process is in use.

### Scouring Textiles

The scouring of textiles, either woven or as yarns, is carried out in order to cleanse the fibres. Textile materials contain natural oils, fats and waxes, and sometimes added oils, while they are occasionally stained with mineral oil. These oils cause the adherence of dirt and grit to the fibres so that the removal of the oils results in a thorough cleansing. The process of scouring consists in the saponification and emulsification of the oils, fats and waxes in the fibre by means of dilute alkalies. Cotton goods are generally given a preliminary scour with milk of lime, but the final scouring is effected with caustic soda, soda ash or silicate of soda, either alone or with soaps.

It has been found that the detergent action of soaps is enhanced by using solvents in conjunction with them. It is essential that the solvents should possess great powers of penetration, and it is advisable that they should also be non-inflammable. These conditions are fulfilled by trichlorethylene which is non-inflammable and is a most powerful solvent, and whose superiority for this purpose is now generally acknowledged.

In recent times, soaps in which trichlorethylene is incorporated have achieved a considerable importance as solvent scourers. These solvent scourers are of two types. The one type is soluble in water, the other forms stable emulsions with water. Both types contain neutral soaps and are used for the scouring of textiles of all kinds.

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### British Chemical Industry Declines

The status of the British chemical industry during 1931 is reviewed in a bulletin just issued by the Commerce Department. Toward the close of the year, it is pointed out, the almost continuous decline in activity evident up to that time was checked and there were signs of renewed confidence combined with greater activity in many lines.

British foreign trade in chemicals and allied products in 1931 showed a decrease in values, especially in exports of domestic products. The balance of trade continued favorable but by only a slight margin, less than £100,000 for the entire year of 1931. In the first quarter of 1932, however, trade improved and the margin was increased to £400,000. Exports of chemicals and allied products in 1931 were valued at £19,855,000 and net imports at £19,762,000, with corresponding figures for the January-March, 1932, period £5,046,000 and £4,646,000, respectively.

Chemical production in Great Britain which had declined steadily in the first three quarters of 1931 showed a marked improvement during the last quarter and the first quarter of 1932. With the increased production towards the end of the year, there was a consequent decrease in unemployment. This improvement continued so that in March, 1932, less than 17 per cent of all insured persons in the chemical industry were registered as out of work, a condition much better than for all industry, which recorded 21 per cent.

# Cleaning Metals

## *The Trend of Modern Chemical Methods*

**By S. Wernick, M. Sc.***

FEW branches of the metal industry but are concerned with some aspect of the cleaning of metal surfaces. Nevertheless only within very recent years have the cleansing methods which satisfied our ancestors been replaced by modern processes which are capable of producing far more efficient results in a fraction of the time formerly required. It is still possible to find the older methods in vogue, usually it is true in the smaller establishments, in those industries which are concerned with the preparation and "finishing" of metal articles. Among the larger firms, the newer cleaning methods and equipment are often to be seen cheek-by-jowl with the old, indicative of the present transition stage in the industrial treatment of metal surfaces. It is but a matter of time before the more ancient processes are totally scrapped in favor of those which are, after all, economically superior (often, naturally enough, the most potent argument in industry).

It is somewhat difficult to understand why the cleaning of metals in general, and the preparatory stages in metal finishing in particular, have been so long neglected by the chemist. No doubt this unsatisfactory state of affairs might have continued, since it was nobody's business to remedy it, and the methods such as they were produced a modicum of good results, while poor or deficient cleaning could readily be remedied by a repetition of the process until the desired state of cleanliness was achieved. Fortunately, one of the most important group of processes for which efficient cleaning is an essential preparatory process, namely, the electrodeposition and electroplating of metals, had in the past ten or fifteen years undergone very considerable development. With the advent of high-current density plating, stringent control of the electrolytes and the conditions of deposition, and automatic plating, a type of deposit was being produced the quality of which had not previously been exceeded. It was free from pits, pores, undue internal stress, had high protective qualities and adhered so tenaciously to the base metal that it was to all intents and purposes a continuation of it. These qualities in the deposited coating (particularly the last) which are increasingly insisted upon by purchasers, are not possible industrially unless the cleaning treatment prior to deposition is efficient and results in scrupulous chemical freedom from all grease, dirt, scale, and oxide.

In the same way, improvements in the application of other finishes to metal surfaces, including paints and enamels, both of the stoving and cellulose variety, have postulated the prime necessity for cleanliness of the surface prior to finishing treatment.

As a result, largely of the demands made by the finishing industries, those cleaning methods which are particularly in use in these industries received very careful examination and overhauling. Considerable development has occurred as a result of investigations into the action of alkali cleaners and the function of the constituents employed in the preparation of these cleaners. The *modus operandi* of grease removal, the function of hydrolysis, emulsification, peptization, soap formation, and the properties of the soaps formed have been carefully studied. Practical application of the principles formulated has followed.

The advent of electro-cleaners, both of the acid and alkali variety, has been an important step in the preparation of metals for plated finishes; the use of the anodic concentrated acid electrocleaner prior to electrodeposition, productive of a mild etch, has been found to result in a remarkably high degree of adhesion, and has found immediate practical application among those manufacturers whose technical staff are *au fait* with this development; it has given every satisfaction in large-scale work as a practical proposition, which is the acid test of an innovation.

Again, solvent cleaners for removal of thick layers of grease, particularly of a mineral nature, difficult to

*Abstracted from "The Industrial Chemist," July 1932.

remove by any other method, have been in use for many years, but the removal of the fire risk by the advent of non-inflammable solvents is a comparatively recent development which is at present deservedly receiving considerable attention in the metal finishing industries.

Newer cleaning technique naturally necessitates the use of special equipment, and here again, manufacturers of cleaning supplies (particularly in the United States) have not been slow in satisfying the new demands. The enlargement of tanks and containers, the use of special materials for the manufacture of the latter, the advent of rubber lining of metal tanks, the introduction of electrical heating, among other developments, indicate the scope of activities in this branch of metal cleaning.

### Pickling

The removal of scale and oxides by immersion in acid, the so-called "pickling" process, in vogue as long as galvanizing, though a simple one, is nevertheless associated with not a few complications under industrial conditions. It has been severally studied for the effect of concentration, temperature, colloid addition, length of time of immersion, embrittlement of steel, over-pickling phenomena, fume restriction and removal, corrosive effects, and so forth. The use of inhibitors is of considerable importance industrially, and here again, the study of the various inhibitors available has proved to be profitable in a definitely practical manner.

In referring to the preparatory treatment of metals, immersion methods of the Coslettising type, which result in the formation of a coating consisting of a compound of the metal treated, should not be forgotten. Although not strictly a "cleaning" process, since such cleaning should ordinarily have been carried out before the metal is subjected to this type of treatment, nevertheless the solutions employed frequently act both as a supplementary cleaner as well as a source of the chemical coating. While Coslettising was probably the earliest of these processes, the original method was improved by the patentees some years ago; in addition other processes of this type, including "Parkerising," "Bonderising," etc., have made their appearance, and are in operation in a number of plants today.

### Sandblasting

Another method of cleaning which totally dispenses with the use of any solution—sandblasting—is by no means new, but its efficiency as a rapid mechanical remover of superficial foreign matter has led to its serious consideration as an alternative mode of cleaning, and hence its occasional adoption. The somewhat prohibitive cost of this process, relative to other cleaning methods, is a factor which naturally calls for careful consideration, but often this is a secondary matter in industrial finishing, and the method is used simultaneously with the "wet" type of cleaner. The initial necessity for individual handling of articles treated in this way has in part been improved upon by the introduction of sandblasting machines capable of taking their place in a mass production chain of operations.

### Industrial Cleaning

The industrial cleaning of metal surfaces is carried out for a variety of purposes, and the efficiency with which it is essential the cleaning shall be performed depends largely on the purpose in view. In general, metals are cleaned either with the object of improving the surface appearance by removal of extraneous matter, or as a preparatory step to some other process, usually a coating process. The metals which are cleaned for the former purpose are usually of a fairly pleasing appearance with small tendency to corrode, *e. g.*, brass, bronze, nickel silver, which under ordinary atmospheric conditions require little or no protection beyond possibly a coating of lacquer or varnish. Special acid "dips" are employed for the purpose, varying in the nature and concentration of the ingredients, but usually comprising a mixture of nitric and sulfuric acids (known, *inter alia*, in the trade as "akey"). It will be appreciated that while for decorative purposes, quite efficient cleaning is desirable, the degree of efficiency necessary is appreciably less than that demanded in cleaning as a preparatory process. Indeed, oxidation of the surface in "decorative" cleaning, which must be avoided in preparatory cleaning, is sometimes a desired effect, and deliberately produced therefore by some chemical or thermal process.

As a preparatory treatment, cleaning is necessary prior to all coating processes, but the importance of its efficiency varies with the type of coating applied. In the field of metal coating, undoubtedly the most sensitive process to an indifferently cleaned metal surface is that of electrodeposition. Frequently, the effect is quite pronounced, as when visible "stripping" of the deposit occurs in the course of the deposition process.

When the degree of cleansing is such that while grease has been more or less effectively removed, a tarnished or oxidized surface has yet been allowed to remain, sufficiently conductive, however, not to prevent deposition, the net result is often poor adhesion, but without visible stripping. The latter, however, is merely postponed, occurring in the course of service months, or sometimes, years, after the deposit has been applied; almost invariably, the underlying surface is found to be stained or locally corroded, providing a ready clue to the cause of the trouble.

Perhaps nowhere is efficient cleaning and perfect adhesion so important as in the electrodeposition of nickel and chromium for "building up," or repairing, worn or undersized machine parts, which are sub-

jected in service to severe abrasion. Special cleaning methods for the preparation of the base metal are necessary which are so effective that the base metal-deposit junction is even more resistant to tensile tests than the base material itself.

### Various Coating Processes

Other metal coating processes, including galvanizing hot "tinning," cementation (Sherardising) and spraying are less sensitive to inadequate preparatory treatment, but it is a *sine qua non* that, other things being equal, the best quality coatings can only result if proper care has been taken in the cleaning stage. Incidentally, the problems of steel embrittlement and over pickling are particularly applicable to the galvanizing and "tinning" industries, which probably employ more pickling liquors than is used in most other coating processes.

Enamelling, both stoving and cellulose, represents another group of processes wherein metal cleaning is highly important, although absence of surface grease is more important than surface oxide. Nevertheless, poor or inefficient results are not uncommon as a consequence of the choice of the wrong type of cleaner or the wrong conditions for a given metal. Freedom from moisture prior to enamelling in the case of stoved finishes is a necessity which, if not complied with, produces unsatisfactory results.

Painting is an excellent example of a finishing process which only too often comes to grief as a result of inadequate cleaning. The spectacle of a liberal number of coats of paint being industriously applied to a surface upon which the rust and scale are blatantly visible is only too common, with the almost inevitable result that sooner or later the hygroscopic corrosion product throws off the chromatic coating.

The total value of the cleaning chemicals employed in the metal coating and allied industries, comprising acids, alkalis, degreasers, solvents and inhibitors, is of no inconsiderable importance to the chemical industry. While the purity of the acids and alkalis used in cleaning is a secondary consideration provided that undesirable impurities are absent or only present within certain limits, chemical suppliers who wish to avoid friction with consumers in this field, require to watch other points which are of importance to the latter, such as maintenance of the concentration of the supply, correct packing with a view to convenient handling and preparing of the cleaning solutions, etc. It is extremely probable, in this respect, that official specifications will be laid down in the near future, in which these and kindred points will be closely defined, so that protection will be afforded both to the chemical manufacturer and the consumer. They are, in fact, in process of formulation at present.

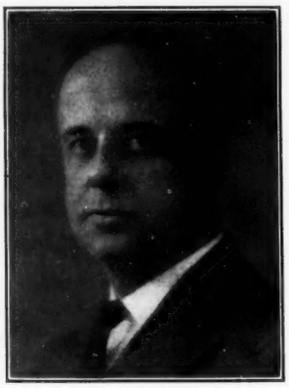
# *We Congratulate*

**Eben Childs Speiden, September 11, 1882**

**Robert Stone Weatherly, September 24, 1899**

**Charles Lester Gabriel, September 28, 1891**

Of the seven Speiden brothers, the oldest, and the youngest have been most prominently identified with chemicals through the old house of Innis Speiden & Company. For years, "C. C." was the dominating director of sales, and since 1915 when the "Isco" plant was started at Niagara Falls, Eben Childs Speiden has presided over the production departments. But, as one of his associates says, "We so value his experience and broad-gauged view of our business that no directors meeting would be a proper quorum without his presence." His first interest is "chemicals"; his second is "out-of-doors", and when not at his desk, he is most apt to be found at his camp on the Ontario shores of Lake Erie where he works off surplus energy, chopping and cooking.



Robert Stone Weatherly is one of the best and most valuable of all the famous "Swann products." From the University of Alabama, he went straight to the Swann organization where today he is the chief liaison officer between the dynamic president and the energetic staff. Frank and sincere, with a likable personality that wears well, he is ideally equipped for a post that is far from a sinecure. He is a poor golfer, a better tennis player, and a superlatively best daddy to his sons who are his hobby. He is in charge of the Swann sales, does some selling himself, handles a mass of organization routine and does some original organization work on his own. He is not lazy.

A brilliant technical man, with an exceptional sense of commercial values, who works very quietly but without lost motion, is how those who know him best describe Charles Lester Gabriel, who after being graduated from "Tech" in 1913 became a salesman for Commercial Solvents in 1910, and worked upwards to Western Sales Manager, to general sales manager, to assistant to the president, to the vice presidency which he has held since 1924. "Gabe" is a follower of unusual sports—hand-ball and bowling—at both of which he excels. He served as a first lieutenant in the Chemical Warfare Service, is married, and is a real "poppa." He is, just at this time, to be especially congratulated upon the coming of September, his natal month, and the passing of the well known open season for hay fever.

# The Camphor Markets and the Tariff

*Transporting Oil in Formosa*

**By Walter J. Murphy**

UNDER the provisions of the Tariff Act of 1930, the duty of five cents on synthetic camphor must be reduced to one cent per pound in the latter part of 1933. Paragraph 51 provided that the rate on natural crude camphor be fixed at one cent; natural refined, five cents; synthetic camphor, five cents; but if at the end of three years the President, acting through the Tariff Commission, should find that during the preceding six months the domestic production by quantity of synthetic camphor did not exceed 25 per cent of the domestic consumption, he should so declare and, six months later, reduce the rate on synthetic camphor to one cent per pound. The exact wording of Paragraph 51 is as follows:

**Imports of Camphor into the United States**

| Year | Crude | | Refined | | Synthetic | |
|---|---|---|---|---|---|---|
| | Pounds | Value | Pounds | Value | Pounds | Value |
| 1923[1] | 3,641,000 | $2,319,000 | 3,240,000 | $2,382,000 | 489,000 | $302,000 |
| 1924[1] | 1,183,000 | 1,007,000 | 2,112,000 | 1,368,000 | 682,000 | 378,000 |
| 1925 | 2,369,000 | 1,301,000 | 1,589,000 | 953,000 | 1,835,000 | 921,000 |
| 1926 | 2,019,000 | 1,159,000 | 1,170,000 | 763,000 | 2,944,000 | 1,558,000 |
| 1927 | 1,690,000 | 810,000 | 1,481,000 | 823,000 | 2,934,000 | 1,263,000 |
| 1928 | 4,365,000 | 1,649,000 | 1,176,000 | 593,000 | 2,265,000 | 909,000 |
| 1929 | 4,204,000 | 1,580,000 | 1,431,000 | 793,000 | 3,957,000 | 1,376,000 |
| 1930 | 1,058,396 | 419,270 | 1,031,584 | 556,672 | 2,404,715 | 850,756 |
| 1931 | 2,003,875 | 714,137 | 1,151,779 | 545,821 | 1,798,116 | 587,364 |

[1] Imports for consumption

"Par. 51. Menthol, 50 cents per pound; natural crude camphor, one cent per pound; natural refined camphor, five cents per pound; synthetic camphor, five cents per pound. If at the end of three years after the enactment of this act, the President finds that during the preceding six months the domestic production by quantity of synthetic camphor did not exceed 25 per centum of the domestic consumption thereof by quantity, or, at the end of four years after the enactment of this Act, that during the preceding six months such domestic production did not exceed 30 per centum of such consumption, or, at the end of five years after the enactment of this Act, that during the preceding six months such domestic production did not exceed 50 per centum of such consumption, he shall by proclamation so declare and, after six months thereafter, the rate on synthetic camphor shall be one cent per pound. To assist the President in making the investigations required by this provision, the Tariff Commission is empowered to investigate, to such extent as may be necessary, in the manner provided in the case of investigations under section 336 of this Act, and shall report to the President the result of its investigation."

At the hearings of the Ways and Means Committee strenuous efforts were made to bring the rate on synthetic down to one cent, but, at the moment, one producer was manufacturing small quantities, hence the compromise in the final wording of Paragraph 51. Production has since been abandoned in this country so that the way will undoubtedly be clear to a tariff change in 1933 on synthetic camphor.

Camphor is one of the world's oldest commodities. Synthetic camphor is one of the newest.

The history of camphor is the history of a number of natural commodities and closely parallels to a certain point that of indigo. The latter, a classical example of the laboratories' triumph over Nature, passed through three stages—the first, a long period when natural suppliers dominated the market, rigging prices at intervals to absurd heights; the second, the years of experiment for synthetic production followed by a period of fierce competition with the natural material for supremacy; and the third, complete surrender of the natural to the synthetic, Natural camphor has passed through two of these stages—will it pass through the third?

In the public's mind camphor is a moth repellant and a cure for colds, whereas only 10 per cent of our total imports are used medicinally. About 66 per cent are consumed in the manufacture of celluloid, 14 per cent in disinfectants, and 10 per cent in explosives. Synthetic camphor production is estimated in normal times at 15,000,000 pounds and the natural production at 10,000,000 pounds annually. The importance of camphor industrially is obvious.

Not a pound of synthetic is produced in this country. Our present dependence upon foreign sources for both synthetic and natural is as great as our former dependence upon Germany for dyes and Chile for nitrate. The reasons for this are both historical and political.

### Early Camphor History

One of the earliest references to camphor is that of the Arabian Imru-Kaisu in the sixth century. An Arab merchant Sindbad, in the ninth century, mentions that camphor is obtained by making incisions in the camphor trees. In the eleventh century, when the palace of the King of the Sassanides was destroyed, large quantities were found. The Arabians and the Italians employed camphor medicinally at that time and the Germans in the twelfth century. With the opening of water trade routes to China, Japan, and later Formosa, the volume of camphor imported to Europe increased tremendously. China, while having a nominal overlordship in Formosa, was in constant difficulties, endeavouring to limit exports from that country and was unable to control prices. In 1895, at the close of the Japanese-Chinese War, China ceded Formosa to Japan. For four years the Japanese government held aloof from the camphor industry, but in 1899 formed a government monopoly. This act marks the beginning of what might be termed the modern history of camphor.

Taiwan (Formosa) is the source of approximately 70 per cent of the world's natural camphor. It is estimated that 77 per cent of the world's camphor trees are on that island, 15 per cent in Japan proper, and eight per cent in southern China. Japan's grip on camphor was comparable to Brazil's former control of rubber. But attempts to grow camphor trees elsewhere signally failed, in contrast to the marvelous success with rubber plantations in the Malay States, and in Sumatra. In Java, Ceylon, Madagascar, Egypt, Italy, France, Brazil, and in Florida attempts to grow camphor trees ended in discouragement.

The reasons for failure were many. The fact that fifty years are required to bring a camphor tree to a maturity when it will profitably produce a yield of commercial importance, and the necessity of destroying the tree in the process, were the main causes for failure. Other obstacles appeared in the matter of climate. Growth is stimulated best under rather exacting conditions of temperature, humidity, elevation and, soil properties, vital factors so far found only in Formosa, Japan, and parts of China. Attempts to use trees ten and twenty years old failed, and only partial success was obtained in the distillation of the foliage. The Japanese government naturally fully appreciated the position it held in one of the essential commodities and proceeded to enjoy it to the fullest extent.

In 1903 the government perfected plans for a complete monopoly. All camphor was sold to a government agency and stringent laws enforced this edict. Production, sales, and prices were controlled directly by the Bureau of Monopolies, a division of the Department of Finance of the Imperial government and of the government general of Taiwan at Taihoka. As might be expected the first result was to force the price to much higher levels. In 1919 the Taiwan Camphor Producing Ltd., a government controlled body, was formed, and vested with all crude camphor and camphor-oil producing rights in Taiwan. It has continuously paid eight per cent in dividends. This agency gradually gained further power by obtaining concessions in China and for many years has practically marketed the entire Chinese output. Still further control of world markets was obtained by legislation which required that at least 60 per cent of the crude camphor be shipped to Japan, giving to home industry a vital domination in refined camphor. In the parlance of the street, Japan was "sitting pretty."

The manipulations of the market by the Japanese monopoly may be seen in New York camphor prices between 1910 and 1921:

| *Year* | *High per lb.* | *Low per lb* |
|---|---|---|
| 1921 | $1.00 | $ .75 |
| 1920 | 3.30 | 1.00 |
| 1919 | 3.30 | 2.50 |
| 1918 | 1.34½ | .76½ |
| 1917 | .89½ | .74½ |
| 1916 | .86½ | .42 |
| 1915 | .44½ | .41 |
| 1914 | .59½ | .41 |
| 1913 | .44 | .44 |
| 1912 | .44 | .44 |
| 1911 | .49½ | .42 |
| 1910 | .45 | .42 |

Granting a certain increase in price was equitable in the war years, the quotations above point to the extra profitableness of the camphor monopoly to the Japanese government.

Shortly after its formation the monopoly instituted allottments to foreign countries. This not only pegged prices at high levels, but Japanese industries consuming camphor in manufacturing operations were afforded distinct advantages over rival foreign industries.

Discussing the monopoly before the Ways and Means Committee in 1921, Nathan M. Clark, vice-

*Typical native still for recovery of crude camphor from chips of the camphor tree. In recent years, the Japanese government monopoly has concentrated refining operations in larger plants*

*Residue of chips after the camphor has been distilled from them. These chips have yielded all the crude camphor that was in them and are of no further value*

president of the Celluloid Company stated: "The competition from Japan threatens to annihilate us. Europe and America are in a similar position as regards camphor which enters largely into our commodity, but Japan rules the world as to this item. We are at her mercy when we buy camphor. She tells us how little or how much we may have, the price we must pay, and has systematically reduced our supply."

The monopoly did more than to restrict production, make allottments, and establish prices. Previously, production of camphor in Formosa, China and Japan was crudely done by small operators, comparable to conditions in our naval stores industry before the advent of large companies employing scientific methods. It proceeded to improve the processes of refining. The native method of extracting camphor was as follows: When a suitable tree was selected a crude still was set up on the spot. The tree was cut up, placed in the still with water and heat applied. Camphor crystals appeared on the walls of the condensor while the camphor oil floated on the top. Camphor oil was pressed out with wooden presses and further purified by subliming. The modern method is by first eliminating the water and oil, either by centrifugal methods, crystallizing from benzine, pressing in hydraulic presses, vacuum processes or by means of air currents in the presence of dehydrating agents, such as calcium chloride or phosphorous pentoxide. The problem of improving refining technique was relatively simple. The problem of tree growth is still particularly difficult. The natives, before the introduction of Japanese control, ruthlessly cut into the large reserves without thought to the future. The monopoly embarked several years ago on a systematic program of reforestation. The average yield from a tree is not very large, so that the necessity for such a program on a very large scale was soon appreciated by the Japanese. The monopoly also devoted considerable sums to research into the use of foliage with but limited results.

Dissatisfaction among the large consuming nations, particularly here and in Germany, prompted camphor tree forestation in various parts of the world, and when this failed, recourse to organic chemistry proved more successful. Turpentine was found to be the essential raw material in synthetic production. Synthetic production started in 1905 and sales were made on a small commercial scale in 1907, but the real start came with the war. The Germans devoted considerable money and effort to synthetic camphor for a very definite reason. They needed camphor, and the Schering interests undertook the problem of producing it synthetically. They succeeded. The chemical reactions involved had been known for years. It remained only to solve commercial application.

Strictly speaking, synthetic camphor is a misnomer. It is more properly artifical camphor. "Synthesis" in a strict sense denotes the process of building up less complex substances into more involved ones. In the manufacture of camphor a more complex substance, pinene, a constituent of turpentine, is broken down to camphor, a less complex compound. Several strictly synthetic processes have been suggested, but to date none have proved of industrial importance.

The following reactions picture the various links in the chain from pinene to camphor:

1. Oil of turpentine treated with hydrochloric acid gas yields pinene hydrochloride. Years ago this product, when not thoroughly understood, was called "artifical camphor."

$$\underset{\text{Pinene}}{C_{10}H_{16}} \longrightarrow \underset{\text{Pinene Hydrochloride}}{C_{10}H_{17}Cl}$$

2. Pinene hydrochloride is converted into camphene:

$$\underset{\text{Pinene Hydrochloride}}{C_{10}H_{17}Cl} \longrightarrow \underset{\text{Camphene}}{C_{10}H_{16}}$$

3. Camphene on treatment with acids gives a mixture of esters of borneol and isoborneol.

4. These esters are either oxidized directly to camphor or saponified.

5. The borneol and isoborneol thus obtained are transformed into camphor:

| $C_{10}H_{17}OH$ | $C_{10}H_{16}O$ |
|---|---|
| Borneol | Camphor |

There are several modifications of this process, but generally speaking the above reactions describe the present method of synthetic camphor production.

With the end of the war Germany had large plant capacity. In the United States one producer, Monsanto, had endeavored in 1917 to step into the breach and produced relatively small quantities up to 1922. This effort was abandoned after a petition to Congress for a duty of twenty-five per cent failed. Japan for the first time was threatened, however, by real competition from two producing companies in Germany.

Her answer was to reduce the price of camphor radically and, so, the competitive position has lowered costs to American consumers and afforded more definite assurances of uninterrupted supplies of sufficient quantity. These results have naturally cooled the ambition of prospective American producers. Japan is likely able to lower prices further should any serious bid for the market be made by an American producer of synthetic material. Without definite assurances of adequate tariff protection over a long period of time it is understandable why American chemical producers hesitate to spend a million dollars or more. An American producer would simply be holding the bag for the camphor consumers who would be the sole beneficiaries of a domestic price war with the German synthetic producers on the other side. While no cartel arrangement is in existence at present between the Germans and the Japanese monopoly, and the two are supposed to be fighting each other tooth and nail, in the face of a common enemy they would probably work in harmony. The prospect of present conditions altering is not bright. German producers have brought American consumers the necessary competition.

And so probably the United States will continue to send abroad its turpentine (favored over turpentine from other countries because of certain desirable peculiarities) and to import synthetic camphor from Germany. The naval stores industry has a very definite interest in camphor as it is now a large outlet for turpentine. Back in 1922 the Turpentine and Rosin Producers Association was actively in favor of a high tariff on camphor. Gradually sentiment among naval stores producers has changed somewhat. Because American turpentine is largely consumed in Germany in making camphor, the naval stores people feel they get just about as much tonnage now as they would if selling to American camphor producers, for it is highly improbable that we could compete in the export markets against Japan.

Another strong deterrent to domestic production is the fact that there are only five celluloid producers in the country at present so that the market is a highly restricted one. Moreover, makers prefer natural, rather than synthetic, material when there is no wide difference in price. Celluloid manufacturers usually employ combinations of natural and synthetic, no doubt largely based on their desire to favor both factions with business in order to continue the competitive position.

The total consumption of camphor in this country under normal business conditions is about 4,000,000 pounds annually. Approximately 1,000,000 pounds are used in the pharmaceutical field, or in fields now closed to synthetic material. The synthetic material is not listed as being of U. S. P. grade although attempts have been made and undoubtedly will be made in the near future to accord it such rating. So, at the moment, the possible market for synthetic camphor in this country is about three to three and a half million pounds—not a very large tonnage to warrant million dollar plant expenditures. Actual tonnage is now considerably below this figure. The celluloid industry is feeling intensely foreign competition, and were it not for the introduction of safety

*Large scale operations in Formosa —bringing camphor trees down to the refineries located at the seacoast. The Japanese camphor industry has been forced to introduce modern methods to comba tthe inroads made by synthetic material*

glass for automobiles and other uses, would be in a bad way. Even the consumption of safety glass is considerably below expectations. Lastly, efforts are being directed to finding substitutes for B. B. grade camphor in celluloid manufacture and should this actually happen the drastic curtailment in the use of camphor would be tragic to a domestic producer.

To answer the question proposed at the beginning of this article: How soon will camphor pass through a third stage wherein the natural will give way entirely to the synthetic?—probably not for a long period.

Japan's throttle hold has been broken, but the monopoly is far from being in the position of the natural indigo producers. With the radical decline in prices for all natural commodities, natural camphor prices have come down and it would seem that the Japanese are in a position to hold prices indefinitely at levels that make profits in synthetic camphor very close.

There is but one other angle. If a much more simple and less expensive process is perfected—a real true synthesis of camphor—starting from a cheap and abundant raw commodity, then the picture would change radically. Until then there is little chance of any revolution in the market setup.

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## U. S. Chemical Trade with the British Empire

The British Empire offers the best foreign market for U. S. chemicals and allied products according to figures just released by the Bureau of Foreign and Domestic Commerce Dept. of Commerce. Throughout the current century exports of chemical products from the U. S. to the British Empire have accounted for 40 per cent or more of the total U. S. exports of chemicals and even in 1931 reached $59,000,000 in value. Together, the United Kingdom and Canada have accounted for 30 or more per cent of the trade. Until 1928 the United Kingdom was the largest buyer, followed by Canada, but in that year, Canada supplanted the mother country as the outstanding single purchaser and has maintained that position.

**United States Chemical Exports to British Empire Countries**
(In thousands of dollars)

| *Country* | [1]1899 | [1]*1913* | *1922* | *1927* | *1929* | [2]*1931* |
|---|---|---|---|---|---|---|
| British countries: | | | | | | |
| Irish Free State | ..... | ..... | 510 | 326 | 319 | 296 |
| United Kingdom | 8,858 | 15,129 | 21,333 | 28,181 | 28,391 | 21,722 |
| Canada | 2,231 | 8,935 | 19,544 | 26,834 | 33,186 | 24,452 |
| British Honduras | 19 | 64 | 93 | 99 | 83 | 107 |
| Newfoundland and Labrador | 30 | 181 | 237 | 326 | 557 | 475 |
| Bermuda | 64 | 62 | 91 | 153 | 154 | 188 |
| British West Indies | 227 | 339 | 752 | 1,178 | 1,031 | 923 |
| British India | 119 | 545 | 1,295 | 3,075 | 3,993 | 2,730 |
| British Malaya | ..... | 183 | 155 | 460 | 613 | 331 |
| Ceylon | ..... | ..... | 45 | 204 | 214 | 230 |
| Hong Kong | 804 | 1,719 | 2,798 | 2,738 | 2,885 | 2,335 |
| Australia | 1,091 | 1,914 | 3,970 | 6,908 | 6,756 | 2,095 |
| New Zealand | ..... | 379 | 1,113 | 1,600 | 1,894 | 938 |
| British East Africa | ..... | 5 | 11 | 177 | 64 | 76 |
| Union South Africa | 346 | 679 | 1,508 | 2,174 | 2,922 | 1,748 |
| Other[3] | 48 | 93 | 266 | 646 | 230 | 284 |
| Total | 13,837 | 30,227 | 53,721 | 75,079 | 83,292 | 58,930 |
| Total, United States chemical exports | 32,260 | 79,225 | 122,691 | 184,133 | 203,207 | 130,607 |

[1]Fiscal year ended June 30.
[2]Includes soaps and cleaning preparations.
[3]Other countries include Gibraltar, Malta, Gozo and Cyprus, British Guiana, Aden, Iraq, Palestine, Gold Coast, Nigeria, British West Africa and other British Africa, and British Oceania.

Both countries are buyers in large quantities of rosin, turpentine, sulfur, industrial chemicals, and industrial-chemical specialties, as well as the highly finished products, paints, medicinals, and toilet preparations. Considering the market drop in prices and other adverse conditions in 1931, the exports of these commodities to Canada and the United Kingdom held up rather well.

During the period 1922 to 1927, inclusive, Australia attained a prominent position as a customer for our chemical products, partially due to its large purchases of sulfur, rosin, and turpentine. In 1931, however, exports of these commodities were small, which partially explains the big decrease in total shipments to Australia, although marked declines also were evident in the large variety of other commodities shipped there.

British Empire countries accounted for 45 per cent of the total U. S. chemical exports in 1931, 41 per cent in 1929 and 1927, 44 per cent in 1922, 38 per cent in 1913, and 43 per cent in 1899. In this discussion no consideration is given to the greatly increased number of branch factories established in British countries by manufacturers whose headquarters are located in the United States.

Either Canada or the United Kingdom has stood out predominantly as the largest buyer of the majority of individual chemical items exported. In 1931 Canada took 19 per cent and the United Kingdom 17 per cent of all chemicals shipped from the United States—a larger proportion than either took in 1927.

**United States Exports to Canada and the United Kingdom in 1927 and 1931**
(In thousands—000 omitted)

| *Item* | *Quantity* | | *Value* | |
|---|---|---|---|---|
| | *1927* | *1931* | *1927* | *1931* |
| To Canada: | | | | |
| Naval stores, gums, resins | ..... | ..... | $2,683 | $1,350 |
| Rosin, barrels | 66 | 49 | 1,116 | 408 |
| Turpentine, gallons | 1,224 | 1,113 | 687 | 430 |
| Pigments, paints, varnishes | ..... | ..... | 3,250 | 2,440 |
| Carbon black, pounds | 8,989 | 9,825 | 639 | 352 |
| Industrial chemicals | ..... | ..... | 9,738 | 9,923 |
| Sodium compounds, pounds | 164,594 | 136,772 | 2,659 | 2,014 |
| Sulfur, crude, tons | 165 | 112 | 2,988 | 2,027 |
| Coal-tar products | ..... | ..... | 1,424 | 1,423 |
| Benzol, gallons | 18 | 21 | 7 | 6 |
| Dyes, colors, stains, pounds | 1,979 | 1,745 | 850 | 807 |
| Medicinal preparations | ..... | ..... | 1,321 | 974 |
| Toilet preparations | ..... | ..... | 710 | [1]1,514 |
| To the United Kingdom: | | | | |
| Naval stores, gums, resins | ..... | ..... | 9,256 | 3,954 |
| Rosin, barrel | 303 | 233 | 4,973 | 1,766 |
| Turpentine, gallons | 7,776 | 5,180 | 4,212 | 1,905 |
| Pigments, paints, varnishes | ..... | ..... | 2,777 | 2,925 |
| Carbon black, pounds | 13,200 | 32,280 | 1,116 | 1,763 |
| Industrial chemicals | ..... | ..... | 4,863 | 5,027 |
| Sodium compounds, pounds | 33,611 | 48,085 | 1,102 | 1,116 |
| Sulfur, crude, tons | 36 | 24 | 745 | 520 |
| Coal-tar products | ..... | ..... | 2,721 | 1,172 |
| Benzol, gallons | 8,397 | 5,669 | 2,342 | 1,102 |
| Dyes, colors, stains, pounds | 13 | 14 | 11 | 11 |
| Medicinal preparations | ..... | ..... | 3,168 | 3,847 |
| Toilet preparations | ..... | ..... | 2,410 | [2]2,440 |

[1]Includes $266,000 worth of laundry soap and cleaning preparations sent to the United Kingdom and $650,000 sent to Canada.

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# *The Industry's Bookshelf*

**Fixed Nitrogen,** by Harry A. Curtis, 517 p., published by Chemical Catalog Co., N. Y. City. $12.00.

This is an American Chemical Society Monograph and fulfills a long felt need for an adequate survey of the nitrogen situation and synthetic nitrogen processes. Associated with Mr. Curtis were 13 authorities on various phases of the nitrogen industry. While replete with technical data, the book is designed also to give a very comprehensive picture of the business or commercial angle of the situation. Mr. Curtis and his associates are to be congratulated on their splendid achievement.

**A History of Science,** by Sir William Dampier, 514 p., published by Macmillan, N. Y. City. $4.00.

The author has successfully traced within the confines of a single volume the history of the development of scientific thought down through the ages in a style which makes for easy reading and clarity of meaning. The author not only has produced a valuable history of scientific advancement, but a splendid history of philosophy as well.

**Fertilizers and Food Production,** by Sir Frederick Keeble, 206 p., published by Oxford University Press, N. Y. City, $1.50.

A discussion of agricultural conditions in Great Britain and a plea for larger crops brought about by a more liberal and intelligent use of fertilizer materials.

# New Products and Processes

## "Ultra Accelerators" for Rubber

Many organic accelerators are patented each year, but only a small proportion of these are eventually passed on by the manufacturer to the consumer.

Recently a new range of accelerators has been put on the market, which contains only derivatives of the dithio-carbamate group. One of these, piperidine pentamethylene dithiocarbamate, is particularly rapid in its action, and is very well suited for use at low temperatures. Because of its rapidity and to prevent the possibility of scorching of stocks, various devices are employed to secure the benefits of such a fast accelerator while avoiding the risks. Where the finished color of the article is of primary importance another member of the range, zinc pentamethylene dithiocarbamate, is recommended. This is more stable, its critical temperature higher, rendering it more suitable for use in cements where exposure may give trouble with the piperidine accelerator.

Lead pentamethylene dithiocarbamate is an ultra-accelerator which has a high critical temperature but is extremely active above it; such an accelerator gives fast cures demanded by industry today, with a high degree of safety from factory processing trouble.

## Water Wax Emulsion

The coating of metal, rubber, leather, straw, paper, plaster of paris and other compositions is now being done with a water wax emulsion which contains no oils or inflammable solvents. Not only is the finish protected against weathering but the cost of this finish is less than that of lacquer or varnish. It is being done by Hydrowax Liquid which may be applied by brushing, tumbling, spraying or dipping. When an extremely bright finish is desired light buffing or tumbling is recommended.

## Sulphur Dyes for Cotton Printing

Improved sulfur dye preparations for printing cotton may be obtained by pasting the sulfur color with glycerine or another similar water-soluble alcohol, such as ethylene glycol or thiodiglycol, in the presence of water with the addition of a hydrotropically acting agent, which may be added to the pasted dyestuff or also to the dye prior to the pasting or to the glycerine.

The pastes obtained in this way are said to be extremely valuable for cotton printing, both from the point of view of their physical condition and of the results obtained.

The term "hydrotropically acting agents" refers to substances which possess the property of rendering soluble in water products which in themselves are insoluble in water. Among hydrotropically acting substances are: urea, thiourea, alkali salts of ethylether sulfuric acid, glycerine hydroxy ethyl-ether, alkali salts (Na, K, $NH_4$), of the following acids: isovaleric acid, isobutyric acid, phenylacetic acid, benzoic acid, *o*-toluic acid, salicylic acid, naphthalene carboxylic acids, benzene sulfonic acids, *p*-toluene sulfonic acid naphthalene, Y-or B-sulfonic acids, dialkyl-aniline sulfonic acids, for example sodium dimethyl or diethyl metanilate or sulphanilate, sodium benzyl sulphanilate, alkali salts of the dialkyl-amino naphthalene sulfonic acids, alkali salts of benzene-or naphthalene sulfonic acids, of *p*-toluene, sulfonyl-diglycine of cyclohexanecarboxylic acid, of tetrahydronaphthalene-B-sulfonic or carboxylic acids obtained by causing halogen fatty acids to react with aromatic hydroxy compounds, for example, phenoxy acetic acid, cresoxy acetic acid, etc.

## New Use for Soda Ash

The Research Council of Alberta reports that practically all of the oil or bitumen can be recovered from the McMurray tar sands by using a solution of soda ash. This simple method of bituminous sand separation by hot water is done by neutralizing the acid in the sand by the addition of a suitable alkali.

## Creaseless Textiles

After fourteen years research, a method has been discovered of producing creaseless cotton or rayon, by impregnating the fibres with a synthetic condensation product, much as a dye permeates cloth, and giving to the cotton, and artificial silk, wool-like properties.

This product has the advantage of adding to the weight of the material, and, being cheaper than cotton, the method of applying it is not expensive. It can be used for a large range of fabrics and is applicable to linen, shoddy, and silk, and may also prove of great interest as a loader for silk. It has a special advantage when used with rayon, as it not only strengthens the material in the dry state but, more important, nearly doubles the wet strength. The process is applied after the materials are bleached, dyed or printed.

## Alcohols

Alcohols are obtained by causing a mixture of an olefine and steam to contact in the vapor phase with a body of material such as broken pumice serving as a carrier or surface distender for sulfuric acid of strength ranging from 60 to 85 per cent at a temperature not exceeding about 200° C., and at atmospheric or higher pressure. Gas mixtures containing olefines may be employed instead of pure olefines. The proportion of steam in the reaction mixture should preferably be sufficient to take part in the reaction and to maintain the concentration of the acid constant. Examples are given, in which ethyl alcohol is obtained by passing ethylene and steam over pumice containing 60 per cent by weight of sulfuric acid at temperatures of 150, 145, and 170° C., and pressures of 1, 3, and 15 atmospheres respectively, the residual ethylene being recirculated. When treating higher homologues of ethylene such as propylene and butylene, the reaction temperature and concentration of the acid is progressively lower than the greater molecular weight of the olefine.

## Dry Cleaning Soaps

Diglycol oleate recently introduced as a dry cleaning soap, is claimed to contain no water. It dissolves clearly in any dry cleaning solvents and builds up less of a pressure in the filter. Its cleaning properties are superior and since only ½ to 1 pint is required for 50 gallons, an economy in cost is achieved.

# *Chemical Facts and Figures*

**Group of Exhibitors Seek Postponement of Chemical Exposition—Hydrogenation Plants in Commercial Operation—Sec'y of The Treasury Mills Finds "Dumping" of Sulfate—Farm Board Offers Wheat for Nitrate—U. S. Chemical Foreign Trade for the First Half of 1932 Summarized.**

To exhibit or not to exhibit—that is the question which has been agitating a small group of chemical equipment manufacturers during the past fortnight. Whether it is better business to ride the rising tide of business sentiment and spend the money for space, decorations, transportation and entertainment involved in the Chemical Exposition, or whether it is wiser to save these sales expenses until a better attendance of chemists, engineers, and executives with more interest in buying and more cash to translate their interest into real orders. That is the problem. It was raised by a couple of New York equipment sales managers who began wondering, made some inquiries among exhibitors, and convinced themselves that there was a widespread sentiment "agin" a Chemical Show in 1933.

Several long protracted conferences were held with Payne (president of the Exposition Company) and Roth (manager of the Chemical Show) who successively developed three defences of the Exposition scheduled for next February. First, this is just the very best time not to withdraw sales efforts. Second, their legal commitments for lease of the Grand Central Palace and with decorators had been made in good faith on the basis of good legal contracts for space signed by the exhibitors made it impossible for them to postpone the plans for the coming Exposition. Third, they were not the sole stockholders in the Exposition Company, and could not change plans without authorization.

## Conferences Fail

A climax in these diplomatic conferences was reached just after the Labor Day weekend and relations were broken off when the exhibitors group evidence of what they seem to consider misrepresentations regarding the legal status of the show and control of the stock of the Exposition Co. In high dudgeon they have sent the following letter, the mailing of which had been held up during negotiations, to all old exhibitors in an effort to sound sentiment:

"As you know the next Chemical Show is scheduled to be held in Grand Central Palace, New York, in February, 1933.

"A hasty canvass among twenty-five of the largest exhibitors around New York City has disclosed the fact that almost without exception they favor postponement of the Show for a year, or at least, until the fall of 1933. The reasons for this feeling are:

"First, most manufacturers do not feel justified in making the necessary expenditures.

"Second, the attendance of engineers and executives from points outside New York would be so reduced as to make the Show unsuccessful from the exhibitors' standpoint.

"An informal committee of New York exhibitors presented these findings to the Show Management, and asked that in deference to the exhibitors' sentiment a postponement be arranged. After a few days consideration the management replied that the building lease and other commitments made a postponement impossible.

"We all recognize these commitments and realize that a postponement would cause the management inconvenience and possibly some financial loss, but few of us have escaped losses imposed by existing conditions and we still feel that the request for postponement is a reasonable one. Some of the largest shows in the country, notably the Oil Show in Tulsa, have been cancelled recently.

"We are anxious to get an expression of opinion from every exhibitor at the 1931 Show on the following points:

Are you planning to exhibit in 1933?

Do you favor the February date or would you prefer postponement?

If no postponement is arranged do you still intend to exhibit?

"We would appreciate your reply to these questions so that we can get an entirely representative picture of the feelings of all exhibitors as to the proper date for the next Show. This letter is being sent to a number of other exhibitors by the Buffalo Foundry & Machine Co., the Alberene Stone Company, the Abbe Engineering Company and the U. S. Stoneware Co.

"Such companies as the Corning Glass Co., F. J. Stokes Machinery Co., Swenson Evaporator Co., Raymond Bros., Impact Pulverizer Co., and Johns-Manville Co. have also expressed themselves as favoring this canvas of opinion.

"May we hear from you right away as initial payments on booth space are due September 11th."

*New York, Sept. 8, 1932.*

This letter was sent individually by the five companies: U. S. Stoneware, Alberlene, Abbe, Dorr, Buffalo Foundry, each taking part of the list.

## Management Statement

Charles Roth gave to CHEMICAL MARKETS the following signed statement setting forth the views and position of the management.

"The unique value of the Chemical Exposition is never so easy to demonstrate as now. The value of such an exposition is not so outstanding in boom times as in years of depression.

"Essentially an exposition means a meeting of the minds and a multiplication of interest and activity. This is brought about by a number of people of like interests congregating in one place to consider the things they make, study and compare exhibits they see, and to derive incentive from the other fellow's accomplishment. An audience of many thousands responding to an effort of this magnitude attends with a group attitude of the open mind, is interested, becomes convinced through eye evidence, decides to purchase. It needs hardly be mentioned that exhibits are stimulating and that they engender a kind of catalytic power, working to sometimes very big effects through mass action.

"Group enthusiasm has something to do with it. But, after all, is this taboo?

"The indications of perceptible business improvement as registered by the most conservative sources, call for the cultivation of any additional stimulus which group enthusiasm may provide. This is one reason why the Chemical Exposition has been in course of preparation for the last eight months and is scheduled for the Week of February 27th, 1933.

"At the present time many leading industrialists are giving their greatest consideration to the subject of instant action to improve business. It is urged by conferences of those who have the best

interests of the nation at heart, that all in positions of responsibility seek not to postpone or further delay any consideration of movements formulated to stimulate a return of normal business activity. The Chemical Exposition is a movement deliberately formulated to this end.

"With the credit situation greatly improved and with business leaders cooperating in movements to stimulate business, it may well be questioned by those who have the best progress of American chemical industry at heart, whether there is justification in organizing to defer the next Chemical Exposition, thereby giving the impression to the business world that the chemical industry is indefinitely or even pessimistically depressed.

"When there is much evidence, increasing month by month, that business is improving and that the coming autumn will be characterized by a conservative advance in the purchase of raw and manufactured materials because of utterly dwindled stocks, and by the replacement of equipment which has served its ultimate industrial life, the sponsors of the Chemical Exposition have established the February show date as optimum.

"Original decision to hold the Chemical Exposition this coming February, and exhaustive planning meanwhile to insure the exhibitors maximum value at that time, has involved the necessity for some courage as well as conservatism. The exposition management having arranged a diversity of shows during the past two decades has endeavored to be deliberate and exhaustive in its present plans. The fact that some 193 companies have contracted for space and many are now planning for their exhibits is the best proof of confidence that the management could require."

### Association Discussed

As we go to press both parties are bestirring themselves. The Exhibitors are canvassing space holders and talking about reviving the old Chemical Equipment Association. The Management is trying to close up deposit payments on space before Sept. 10, and talking about their "rights." It is all very reminiscent of the fracas when the Show schedule was forced from the annual to the biannual basis.

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### Hydrogenation

Standard Oil has answered the often repeated question—"Of what practical commercial use is the hydrogenation process?" Already a new series of lubricating oils are on the market produced solely by hydrogenation. The name "Essolube" has been chosen as a trade name and the word "hydrofined" coined to stress in the public's mind that the oils are produced by a new method. On August 9 Dr. R. T. Haslam, Vice-President and General Manager of the Standard Oil Development Co. and Dr. C. E. Lanning, in charge of the Bayway hydrogenation plant, conducted a party of representatives from the technical press through the plant. Nothing was concealed. Every possible question was answered. The secretiveness of the past three years was over. What concrete results have been accomplished so far? What results may be expected shortly? What results may be looked for in the future? In short, what are the returns on an investment of close to $25,000,000?

During the inspection, Dr. Haslam announced, that an unexpected increase in kerosene consumption last winter had forced the company to devote the hydrogenation plant's entire capacity for five months to filling this demand. At the smaller of the two hydrogenation plants at Baton Rouge, a new group of solvents will be produced which will find a ready market principally in the following fields: paint and varnish, lacquers, synthetic finishes, rubber products, artificial leather, and a number of special uses where a combination of high solvent power and controlled evaporation rate is essential. These solvents are said to possess superior qualities to other petroleum solvents and also possess superior characteristics to some of those of the coal tar products with which they will be in natural competition. Finally, in the list of products to be made immediately, must be added a new safety fuel for particular use in airplanes and motorboats. This motor fuel possesses qualities of an interesting character. It is reported to be practically free from the danger of accidental ignition under normal temperature conditions, at the same time being equal or superior to the best aviation gasoline in octane number and operating efficiency. The flash point is over 105 degrees Fahrenheit. It is not adoptable to use in automobile engines because of the difficulty of starting.

It is said to be likely that within the next six to twelve months benzol, or rather a substitute for benzol, which has the blending characteristics of a 110-octane number naphtha, or higher than pure iso-octane (the substance mixed with normal heptane in determining octane number) will be produced commercially at the Bayway hydrogenation plant, principally for export for anti-knock blending purposes. At the moment, carbon dioxide gas equivalent to 70 tons a day of "dry-ice," is being blown into the atmosphere at Bayway and will be utilized eventually. Sulfur production is a possibility, but tonnages are relatively small, and it is extremely doubtful whether under present conditions it would be commercially worth while to attempt to save it.

### Funds Needed

The Committee on Unemployment and Relief for Chemists and Chemical Engineers for the metropolitan area is again appealing to those employed for funds to carry on the work of relief. An amount close to $300 a week is necessary to aid the destitute families of chemists and engineers. Funds on hand are only sufficient to carry on the work until Oct. 1. Registration and the number of needy cases are increasing. The Committee welcomes contributions no matter how small. Checks should be made payable to Robert T. Baldwin, treasurer, care of the Chemists' Club.

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## *Washington*

Outstanding in the Washington news of the month was the announcement by Secretary of the Treasury Mills that he had found evidences of dumping of ammonium sulfate from Germany, Belgium and Poland and that such action was seriously effecting the domestic industry.

The effect of this action will be to bring about the assessment of supplementary duties with respect to all future imports where it is found that the price for which the commodity is offered here is below that in the country of export.

Holland seems to have been the principal country of export in recent months, but no determination has been reached in its case because the study of the situation has not been completed.

Complaints on the general subject of dumping of ammonium sulfate began to reach the Treasury Department as far back as November, 1930. Little was accomplished in respect thereto until when, in July, 1931, the International Nitrogen Cartel ceased to function, and numerous complaints again were received protesting the low prices.

The Customs Service made investigations and dumping was established to the satisfaction of Secretary Mills. It is not possible to estimate how much additional duty will be exacted with respect to future imports if still subject to the complaint of dumping, since the situation differs, as to the various cases.

In some instances, it is believed, the appraiser will have to make an independent investigation to determine the degree of dumping and report his findings to the collector for the assessment of such sums as will equalize the difference between foreign and domestic selling prices.

Already one or two importers have been assessed $10 a ton and the uncertainty surrounding the rate to be charged will, in all probability, act as a deterrent to future shipments. Importations totalled 165,441 tons with a declared value of $3,208,771 in the first six months of this year.

### Naphtha Not Taxable

The Internal Revenue Bureau announced, on Aug. 16 in a letter to Warren

N. Watson, Manufacturing Chemists' Association secretary, that technical naphtha is not subject to the gasoline tax. It was also disclosed that the Bureau had exempted dry ice. While chemically carbonic acid, it was held that it is not commonly used for carbonic beverages and hence not taxable. However, where it is employed as a source of carbonic acid gas for beverage purposes it is taxable at the four cent rate. Glycerine is not taxable as a toilet preparation, according to a ruling made on Aug. 25, but mixtures of glycerine and other pharmaceutical preparations are within the meaning of the law.

### Tariff Changes on Glue

Decrease in the present rate of duty on inedible gelatin and glue of animal origin and sheep's wool sponges were ordered by President Hoover in a proclamation carrying out recommendations of the Tariff Commission.

Duty on gelatin and glue of animal origin, not specially provided for, valued at less than 40c per pound, namely, 25 per cent ad valorem and 2c per pound, was changed to 20 per cent ad valorem and 2½c per pound. The present duty on gelatin, glue, glue size and fish glue, not specially provided for, valued at 40c or more per pound; namely, 25 per cent ad valorem and 8c a pound, was not changed as was recommended by the commission.

The Tariff Commission announced that a public hearing will be held on Sept. 20 on sperm oil requesting all interested parties to be present on that date in Washington.

### Du Pont New Dyes

Du Pont dyestuffs division has developed a new dyestuff designated as Pontamine diazo blue 6G, which is a direct color recommended for development with beta naphthol. The dyestuff is of greater value for discharge purposes, giving clear whites on cotton and tinted whites on silk. The general fastness of this color is sufficiently good to meet all ordinary requirements for women's dress-goods and similar fabrics. It is stated that this dyestuff will be most widely used on cotton and rayon, but may also be applied to pure silk when dyed in an acid bath. Very satisfactory results may be obtained in all types of machines.

### Nitrate for Wheat?

Several new angles were added to the already badly tangled nitrogen situation in August. Early in the month press dispatches from Washington announced that the Government was considering informally a proposal to barter 2,500,000 bushels of wheat, property of the Federal Farm Board, for 40,000 tons of Chilean nitrate. Immediately a barrage of protests greeted the plan. Domestic producers of synthetic nitrate insisted that they were being discriminated against needlessly and alleged that the Farm Board was attempting to salvage part of the wreckage of its operations in the grain markets at the expense of one of the most important divisions of American industry.

Francis P. Garvan, Chemical Foundation head, also voiced a similar protest against such a barter, charging that the international cartel was concentrating its efforts towards destroying the American nitrogen industry.

Said President Garvan, "The proposal that the Federal Farm Board exchange 2,500,000 bushels of wheat for 40,000 tons of Chilean nitrate is contrary to the policy laid down by President Hoover, then Secretary of Commerce, in 1926 when he appeared before a committee of Congress and urged that steps be taken to make America independent of a number of monopolies among them the Chilean nitrate monopoly.

"The importation of 40,000 tons of nitrate into this country at the present time, in return for 2,500,000 bushels of wheat, will mean an increase in the number of unemployed in this country. It will be another blow by the international nitrogen cartel at the American nitrogen industry. I do not think the American people will stand for our government using our money to support this international nitrogen cartel by trading American wheat for Chilean nitrate.

"We have a situation in which the members of the international nitrogen cartel dump their products into this country, while the American producers of nitrogen are unable to export a single ton of their products to European countries in the international cartel."

*Pres. Francis P. Garvan Continues his bitter attack on the new nitrogen cartel*

The next proposal was to turn over the 40,000 tons of Chilean nitrate to the army reserves. This plan was designed to meet the objection that our domestic production is now far in excess of present requirements and should not be further handicapped by such competition. The War Department gave the matter some thought and then concluded that its present stocks were adequate for all

## *COMING EVENTS*

**American Bottlers of Carbonated Beverages,** Cleveland, Nov. 14-18.

**American Institute of Chemical Engineers,** Washington, D. C., Dec. 7-9.

**Electrochemical Society,** Cleveland, Sept. 22-24, Hotel Cleveland.

**Exposition of Chemical Industries,** Grand Central Palace, N. Y. City, Feb. 27—March 4, 1933.

**National Safety Council,** Washington, D. C., Oct. 3-7.

**Salesmen's Association Golf Meeting,** Maplewood Country Club, Maplewood, N. J., Sept. 13.

**Technical Association Pulp & Paper Industry,** Holyoke, Mass. Sept. 14-16.

**Tenth Exposition, Power & Mechanical Engineering,** Grand Central Palace, Dec. 5-10.

**New German Nitrogen Prices for 1932-1933**

*Reichsmark per kilogram of nitrogen*

| | *July 1932* | *Aug. 1932* | *Sept. 1932* | *Oct. 1932* | *Nov. 1932* | *Dec. 1932* | *Jan. 1933* | *Feb. 1933* | *March-June 1933* |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia sulfate | 0.66 | 0.68 | 0.70 | 0.70 | 0.71 | 0.72 | 0.74 | 0.76 | 0.76 |
| Ammonia chalk | 0.64 | 0.66 | 0.68 | 0.68 | 0.69 | 0.70 | 0.72 | 0.74 | 0.74 |
| Ammonia sulfate-nitrate | 0.73 | 0.75 | 0.77 | 0.77 | 0.78 | 0.785 | 0.805 | 0.825 | 0.825 |
| Ammonia nitrate chalk | 0.79 | 0.79 | 0.80 | 0.80 | 0.81 | 0.83 | 0.85 | 0.86 | 0.86 |
| Potash-ammonia nitrate | 0.77 | 0.77 | 0.78 | 0.78 | 0.79 | 0.81 | 0.83 | 0.84 | 0.84 |
| Urea | 0.80 | 0.81 | 0.83 | 0.83 | 0.84 | 0.86 | 0.88 | 0.91 | 0.91 |
| Cyanamide, A & B content* | 0.65 | 0.67 | 0.69 | 0.70 | 0.71 | 0.73 | 0.75 | 0.77 | 0.77 |
| Calcium nitrate | 0.92 | 0.92 | 0.92 | 0.93 | 0.93 | 0.93 | 0.95 | 0.97 | 0.99 |
| Soda nitrate | 1.05 | 1.05 | 1.05 | 1.06 | 1.06 | 1.07 | 1.08 | 1.08 | 1.09 |
| Nitrophoska I | 22.34 | 22.34 | 22.34 | 22.34 | 22.84 | 22.84 | 22.84 | 23.34 | 23.34 |
| Nitrophoska II | 20.98 | 20.98 | 20.98 | 20.98 | 21.48 | 21.48 | 21.48 | 21.98 | 21.98 |
| Nitrophoska III | 22.80 | 22.80 | 22.80 | 22.80 | 23.30 | 23.30 | 23.30 | 23.80 | 23.80 |
| Nitrophoska IV | 18.00 | 18.00 | 18.00 | 18.00 | 18.50 | 18.50 | 18.50 | 19.00 | 19.00 |

*In the case of cyanamide B content the consumer is rebated one pfennig per kilo N for saving in freight, packing, etc.

Prices in the table are per kilogram of nitrogen content except in the case of nitrophoska which is quoted per 100 kilograms of product. Prices of calcium nitrate, sodium nitrate, and nitrophoskas are subject to change.

emergencies. At the moment it appears that the idea will be abandoned completely.

### Reduction in Nitrate Price

Seldom do price changes of industrial chemicals become "front page stuff" for our leading daily newspapers, but the recent announcement of a new schedule for Chilean nitrate attained that distinction. The sharp reduction of $11 a ton was seized upon by special correspondents and editorial writers as an indication of the future activity of the international nitrogen cartel.

Reports from abroad state that the meeting for the final ratification of the new cartel agreement will be held on Sept. 15, probably in Berlin. It is understood that the Chilean government is ready to officially join the cartel group.

*M. G. B. Whelpley*
*Now in Chile negotiating new deal on the Cosach with Davila*

The Chilean ambassador to the Court of St. James participated with M. B. G. Whelpley, Cosach president, at the various preliminary discussions. The latter is now on his way to Santiago presumably to deal with the Davila regime on the reorganization plans for the Cosach financial structure.

### Concannon Reports

According to C. C. Concannon, head of the Chemical Section of the Bureau of Foreign and Domestic Commerce, exact data on the quantity allocated to the Chilean industry under the pending agreement are lacking. An unconfirmed report states that by the terms of the agreement Chile obtains the right to export 900,000 tons of sodium nitrate to the European market and 100,000 tons to the other markets. Chile agrees to maintain a set price provided it is able to sell its total export quota, but receives the right to reduce prices if it is unable to dispose of its full allocation.

### Authentic Details Lacking

Negotiators are keeping secret the details of whatever agreements they have reached, and information of an authentic character on the details of the individual agreements is scarce. For this reason the current negotiations may not result in a "cartel" but in a series of special agreements. The primary objective, it is asserted, is to stabilize the market by equalizing the price level in "unprotected" areas with that prevailing in the "protected" countries.

### New Board of Control

It is understood in London that the arrangement between the European countries extends over several years. The European exports will in future be centralized in a board on which Britain, Germany, and Norway are represented, and which will control the industries of Britain, Germany, Norway, France, Belgium, Holland, Poland, Italy, Czechoslovakia, and Switzerland. Domestic markets, with the exception of the northern countries and Spain, will solely be reserved to their respective industries, which will also regulate domestic market prices. A restriction of production was not agreed upon, but production will regulate itself in accordance with the home demand and the export quota.

The tentative agreement with Chile will run for one year, with option of renewals for a second year on the same terms. Chilean nitrate stocks are understood to be 430,000 tons of nitrogen, and the interested bankers have agreed not to force dumping but to permit liquidation to be spread over two years. As in the case of the European participants, Chilean production is not to be restricted, but exports will be based on the situation at the end of the price war.

### Export Quotas

The export quotas will not be determined until final approval by Chile, but it is understood that the combined world export tonnage of Europe and Chile during the current nitrate year (to July 1, 1933) has been fixed at 510,000 metric tons of nitrogen, of which 460,000 tons are to be sold outside of the U. S. Of the allotment outside of the U. S., Chile is to be given 30 per cent, according to information reaching here, with a premium of 50 per cent of all sales over 460,000 tons up to a maximum of 37.5 per cent of world exports outside of the U. S. Another 30 per cent of this figure is understood to be assigned to German and Norwegian synthetic nitrate of soda and the remaining 40 per cent to sulfate of ammonia from all countries of Europe. In order to bring the price of sulfate of ammonia up to the level of nitrate of soda and nitrate of lime, a cash penalty will be imposed on exports in excess of quotas.

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### National Safety Meeting

During the week of Oct. 3 to 7, delegates from Chemical plants will meet at the Wardman Park and the Shoreham hotels in Washington, to consider practical cooperative methods for the promotion of health and the reduction of accidents in their industry.

This program for the chemical industries will be conducted by the chemical section of the National Safety Council, as a part of the Twenty-First Annual Safety Congress and Exposition. General Chairman of the Section is John S. Shaw of Hercules.

### Discouraging Figures

The accident experience of the chemical industry for the past year has both encouraging and discouraging features. The 145 units which have reported during the past three years to the National Safety Council show a reduction from 14.73 accidents per 1,000,000 man-hours in 1930 to 10.65 for 1931. On the other hand there was considerable increase in the severity rates—from 1.95 for 1930 to 2.01 for 1931, as contrasted with only 1.63 days lost per 1,000 man-hours in 1929. This indicates that chemical plants as a group have made no consistent progress during the past two years in the reduction of serious injuries. The increase in seriousness of accidents for 1930 was due principally to a sharp rise in permanent partial disabilities, and in 1931 to more fatalities. It is possible that the elimination of serious hazards has seemed too costly during the past year or two. Or it may be that the shifting of employees from one job to another has resulted in increased hazards of a serious character.

### Interesting Program

The Congress program for the Chemical Section will include four half-day sessions. At the Tuesday morning session General

*Warren N. Watson*
*M. C. A. Secretary to speak at safety meeting*

Chairman John S. Shaw will give a "Resume of Year's Activities." Other topics will be "The Handling of Chemicals" by Warren N. Watson, secretary, Manufacturing Chemists' Association; "Storage and Handling of Compressed Gases and Volatile Liquids" by F. R. Fetherston, secretary, Compressed Gas Manufacturers' Association; "Data on the Efficiency of Modern Respirator

Equipment to Lead Dust and Fumes" by R. C. Stratton, supervising chemical engineer, Travelers Insurance Co.

The Wednesday morning session will be held jointly with the Industrial Health Section. There will be a Symposium on Activities of the chemical industry in Preventing Poisoning from the Viewpoint of: "The Chemical Manufacturer," by F. W. Dennis, personnel director, Hooker Electrochemical; "The State" by Dr. Albert S. Gray, director, Bureau of Occupational Diseases, Connecticut State Department of Health; "The Federal Government" by Dr. Wm. P. Yant, supt. Bureau of Mines Experiment Station.

For the Thursday morning session there will be an address on "Safety in Chemical Pumps and Pumping Machinery" by J. C. Lawrence, chemical engineer, du Pont. Also addresses on "The Use of Stainless Steels in the Chemical Industry" by K. E. Luger, metallurgist, American Sheet and Tin Plate; and by E. C. Wright, metallurgist, National Tube Co.

At the Friday morning session J. K. Hoskins, sanitary engineer, U. S. Public Health Service will talk on "Stream Pollution." This will be followed by a round-table discussion on "Accidents and Their Causes in the Chemical Industry." The discussion leaders will be C. E. Ralston, safety director, Pittsburgh Plate Glass; and Ira V. Kepner, safety director, Pennsylvania Salt.

## *Association News*

Dr. Charles L. Parsons, secretary of the A. C. S. for the past 25 years, was presented with the Priestley Medal, highest honor of the society at the recent Denver meeting.

Dr. Parsons is one of the best known chemists in the U. S. Since 1931 he has been business manager of the Society. He has contributed largely to the development of that organization as the largest professional body of its kind in the world.

## *Personnel*

Oren C. Leetun appointed manager of the St. Louis office of American Agricultural Chemical.

Stanley H. Ellis, until recently with Barrett appointed assistant to J. P. Brinton, Jr., manager of the ammonia division of Hydrocarbon Products.

Ralph L. Dunckel, formerly with the International Motor Co., has been placed in charge of production and purchasing at the Bridgeport plant of the Kron Co. Mr. Dunckel is a graduate of Cornell University. J. D. Young, formerly of the Chicago sales office of Wright Manufacturing, has become affiliated with the Chicago office in a sales capacity.

## U. S. Foreign Trade

About the only outstanding characteristic of the U. S. chemical foreign trade for the first half of 1932, according to a recent report by C. C. Concannon, Chief of the Chemical Division, Bureau of Foreign and Domestic Commerce, was the gradual widening of the margin between exports and imports until the total shipments of chemicals and allied products exceeded total imports by $8,800,000, for the current half year.

Looking at the trade month by month, January figures were the largest and June the smallest of the year. Perhaps one encouraging sign was the pick-up in imports of the important industrial raw materials of lac and shellac and camphor. Practically the same commodities which showed larger exports for the first quarter of 1932, registered gains in the first half year.

### Destinations Unchanged

No marked changes were made in the countries of destination of the chemical exports. Apparently the marked decline in the total figures was due to smaller shipments to all markets, rather than to a loss of any particular market. Canada, the United Kingdom, Germany, and Japan continued to be the leading markets and accounted for the same percentages of total exports as in 1931—19, 12, 8, and 6 per cent, respectively. Figures for exports to these countries in the first half of 1932 were: Canada, $9,000,000; the United Kingdom, $6,000,000; Germany, $3,700,000; and Japan, $3,000,000.

Total exports and imports of chemicals and allied products by major groups are recorded in the following table:

The following summary, is confined to a few commodities of interest, either because the trade is increasing or because the item is comparatively new in export trade.

France has come to the front as an outlet for crude coal tar and coal-tar pitch, having taken 145,700 barrels ($332,500) of total exports of 182,000 barrels $430,000) of coal-tar, and 56,600 tons (535,600) of a total of 78,500 tons ($762,000) of pitch. Belgium was another important outlet for pitch in 1932 with 12,200 tons ($140,000).

### Trade with Great Britain

Practically every country in the world offers a market for chemical specialty compounds, but, as a rule, Canada and the United Kingdom purchase the major portion. Of a total exportation of 2,162,000 pounds ($127,400) which, by the way, showed a decline in prices, Canada took 1,776,000 pounds ($106,800). For another specialty, rubber compounding agents accelerators, retarders, etc., Japan received nearly one-fourth of the total of $403,900 (757,500 pounds).

Cuba came forward as the country of destination for the bulk of the hydrochloric acid shipped, with more than was exported there for the entire year of 1931, or 4,663,000 pounds for the first half of 1932, of a total of 5,113,000 pounds shipped to all countries.

Japan, with more than half of the total, was the chief market for boric acid—936,200 pounds, followed by Canada with 383,000 pounds.

Canada, the United Kingdom, and Japan, were the chief outlets for methanol, butanol, acetone, carbon tetrachloride, carbon bisulfide, and miscellaneous synthetic organic chemicals, having received about 80 per cent of the total shipments of these commodities. The United Kingdom alone, however, was the destination for 3,500,000 pounds ($287,000) of citrate of lime with the remainder of 13,000 pounds ($400) shipped to Spain.

European countries and Canada purchased all the sodium borate shipped in the current period. This commodity advanced from 76,213,000 pounds ($1,586,500) exported during the first half of 1931 to 99,728,800 pounds ($1,600,000) in the first half of 1932. Germany, the Netherlands, France, the United Kingdom, and Belgium were the chief markets.

### Fertilizer Materials

In the fertilizer branch, the class "other nitrogenous chemical materials," chiefly sodium nitrate, doubled the amount exported last year to a total of 65,200 tons ($1,856,200). Leading countries of destination for this class were: France, 42,800 tons ($1,214,000); Spain, 4,900 tons ($127,100); Canada, 4,700 tons ($175,100); Japan, 7,900 tons ($203,700); and Egypt, 4,400 tons ($120,600).

More than double the amount of high-grade hard phosphate rock was exported in

**Foreign trade in chemicals and allied products, first half of 1932**
(In thousands of dollars)

| Group | Exports First half of— 1931 | Exports First half of— 1932 | Imports First half of— 1931 | Imports First half of— 1932 |
|---|---|---|---|---|
| Total | 68,290 | 49,029 | 65,479 | 40,261 |
| Naval stores, gums, resins | 6,571 | 5,682 | 7,588 | 5,230 |
| Crude drugs and botanicals | 802 | 407 | 2,691 | 2,714 |
| Essential oils | 779 | 651 | 1,938 | 1,495 |
| Sulfur | 3,884 | 3,940 | ..... | ..... |
| Coal-tar products | 5,350 | 4,202 | 5,611 | 4,693 |
| Dyes, colors, stains | 2,677 | 2,082 | 2,792 | 2,102 |
| Medicinal preparations | 7,927 | 5,377 | 2,188 | 1,649 |
| Industrial chemical specialities | 7,542 | 5,279 | 9,326 | 7,317 |
| Industrial chemicals | 10,543 | 8,050 | | |
| Pigments, paints, varnishes | 8,378 | 5,516 | 996 | 798 |
| Fertilizers and materials | 7,700 | 4,338 | 26,421 | 9,903 |
| Soaps and toilet preparations | 5,918 | 3,278 | 1,445 | 1,084 |

the current year, to a total of 42,900 tons, $253,900, over one-half of which went to Canada.

Other interesting commodities which recorded gains were peppermint, orange, and lemon oils, and gum rosin and spirits of turpentine. The United Kingdom, Canada, and Germany were the major outlets for these.

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### Unemployment Gains

Factory employment in the manufacture of chemicals and related products in the U. S. dropped 1.9 per cent in July, and payroll totals in these industries were 6.5 per cent lower than in June, according to data compiled by the Bureau of Labor Statistics. The bureau's index number for employment in chemical manufacturing was 68.0 for July (100= monthly average for 1926), compared with 69.3 for June and 83.0 for July, 1931. The index number for payroll totals was 56.5 for July, compared with 60.4 for June and 81.0 for July, 1931.

The bureau's index numbers for all manufacturing industries for July were:—Employment, 55.2; payroll totals, 36.2.

Details for the several divisions included in the calculation of the bureau's index numbers for the chemical group of industries show the following comparisons:

**Employment**

| | *July, 1932* | *June, 1932* | *July, 1931* |
|---|---|---|---|
| Chemicals | 82.1 | 83.6 | 95.2 |
| Fertilizers | 30.4 | 32.5 | 41.3 |
| Petroleum refining | 64.1 | 64.7 | 73.7 |
| Cottonseed oil, cake, meal | 28.1 | 23.8 | 26.0 |
| Druggists' preparations | 66.1 | 70.5 | 79.6 |
| Explosives | 66.6 | 71.3 | 98.3 |
| Paints and varnishes | 68.9 | 72.3 | 80.9 |
| Rayon | 92.9 | 93.4 | 156.5 |
| Soap | 93.1 | 95.7 | 100.5 |

**Payroll Totals**

| | *July, 1932* | *June, 1932* | *July, 1931* |
|---|---|---|---|
| Chemicals | 58.6 | 61.6 | 81.6 |
| Fertilizers | 24.0 | 25.1 | 40.7 |
| Petroleum, refining | 56.8 | 59.4 | 73.8 |
| Cottonseed oil, cake, meal | 28.3 | 26.4 | 28.8 |
| Druggists' preparations | 64.2 | 70.6 | 86.9 |
| Explosives | 42.8 | 45.5 | 80.8 |
| Paints and varnishes | 53.0 | 61.8 | 78.2 |
| Rayon | 71.2 | 78.3 | 157.0 |
| Soap | 82.6 | 90.5 | 96.9 |

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Charges have been lodged with the Treasury Department that vanillin is being dumped in this country by foreign producers.

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## *Obituaries*

### John Jackson Riker

John Jackson Riker, 74, former president of J. L. & S. D. Riker, leading chemical firm of an earlier era, died at his summer camp in the Adirondacks on Little Moose Lake on Aug. 4.

Mr. Riker was educated at private schools in Jamaica, L. I., and later the Charlier Institute. In 1876 he joined J. L. & D. S. Riker, which firm his father founded 70 years ago, starting to work as an office boy. Twelve years later he was admitted to partnership and in 1890 following the death of his father he became the senior partner. In 1901 the firm was incorporated with Mr. Riker as president. Under his management the firm, already internationally recognized as a leader in its field, made further progress. In 1914 he retired and was succeeded by a brother, the late Charles Lawrence Riker, who died June 22 last.

The Rikers, Hills, and Wing & Evans were the three leading chemical importers and jobbers for years at a time when the American chemical industry was in its infancy and Mr. Riker's passing serves to recall vividly the years when these three houses virtually controlled the alkali markets. Upon the retirement of Charles L. Riker ownership of the company passed into the hands of Joseph Turner and the firm name was changed to Joseph Turner & Co.

Mr. Riker, in addition to his activities in the Riker firm had other extensive business interests. He was president of the Riker Homestead Estates, Inc., and held directorates in New Jersey Zinc, Bertha Mineral Co., and Empire Zinc Master Painters Supply Co. He was prominent in insurance circles and held several directorships.

Mr. Riker was a member of the Society of the Cincinnati, the Society of Colonial Wars, the Society of the War of 1812, the Sons of the Revolution, the St. Nicholas Society, the Holland Society and the Chamber of Commerce of New York State. His clubs included the New York Yacht, the Automobile of America, the City Midday, the Union, the Down Town, the Apawamis, the Adirondack League and the Rittenhouse of Philadelphia.

Mr. Riker married Miss Edith M. Bartow in Brooklyn in 1881. She survives him, as do three sisters, Mrs. J. Amory Haskell, Mrs. James R. Strong and Mrs. Henry I. Riker; and a brother, Samuel Riker, New York attorney.

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### Albert Gardner Robinson

Albert Gardner Robinson, 77, former well-known newspaper correspondent, author, and former treasurer of U. S. I., died Aug. 30 at the Chemists' Club in New York. He had made his home a the club for the past 15 years.

During the Spanish-American War he served as correspondent for *The New York Evening Post* in Porto Rico and Cuba, and was later sent by it as correspondent in the Philippines and still later in South Africa during the Boer War. From 1903 to 1912 he was special correspondent of *The Sun* in Washington.

In his Cuban days Mr. Robinson had made the acquaintance of H. S. Rubens, at present the sole survivor of the Cuban revolutionary junta, and in 1912 Mr. Robinson became associated with U. S. I. of which Mr. Rubens was then president. He held the position of treasurer until 1927, when he retired.

Mr. Robinson wrote several books. Most of these were devoted to conditions in Cuba and the Phillipines. He was an authority on New England architecture and two of his most widely read books were "Old New England Doorways" and "Old New England Houses."

He belonged to the Cosmos and National Press Clubs in Washington, the Harvard Travelers Club in Boston and the Century and Chemists Clubs here. He served as treasurer of the Chemists Club from 1921 to 1928. He was active in charitable work, and set up many "A. G. Robinson Book Collections" in small New England towns.

He was one of the industry's most colorful figures. A brilliant conversationalist, his wide circle of friends, particularly in Chemists' Club circles, will miss his presence in his favorite chair on the first floor.

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### John Henry Jahn

John Henry Jahn, 37, president of C. J. Osborn Co., distributor of carbon blacks, lamp blacks, color, and pigments, in N. Y. City, died Aug. 9 at his home in Mount Vernon, N. Y., after a short illness. He was educated in the city's public schools and graduated in 1916 from the chemistry division of Cooper Union. He entered the employ of the C. J. Osborn Co. in 1909, later becoming salesman and in 1919 became president of the company, following the death of C. J. Osborn, founder of the company.

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Joseph Hummel, 93, one of the pioneers in the development of the manufacture of white lead in this country and father of Joseph Hummel, jr., secretary of Eagle-Picher Lead, died Aug. 12, at his home at Prince Hill, a suburb of Cincinnati.

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Marion Henry Foss, 47, died on Aug. 12 at his home in Philadelphia.

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Thomas J. Clexton, 67, dealer in chemicals and dyestuffs, died Sunday at Brookline, Mass. Mr. Clexton had been in business in Boston for many years. He was a member of Boston Athletic, Algonquin Club, the Dry Salters and the National Aniline Association.

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### Acquires U. S. Rights

American Hyalsol Corp. has been formed to acquire U. S. and Canadian patents and patent rights relating to the manufacture and use of higher alcohols and sulfonation products. The rights that have been acquired are those held by the Chemicalien Handel A. G., Zurich, Switzerland, under patents of the Deutsche Hydrierwerke, A. G., Berlin-Charlottenburg, and H. Th. Bohme A. G. Chemnitz, Germany.

The sulfonation products to which the Hyalsol rights apply (the major product

is reported to be sodium-lauryl sulfonate) find their chief application in the manufacture of soap. Sodium lauryl sulfonate is said to be the only product of its kind which lathers. Its addition to soap is said to overcome the difficulties of using hard waters for cleansing purposes, and to produce a soap that will lather freely with seawater.

Officers of the Hyalsol company are: President, Dr. Lewis H. Marks; secretary-treasurer, Nelson Littell of the law firm of Hammond & Littell.

Licenses for the manufacture and use of the higher alcohols and wetting agents and other sulfonated derivatives which have been sold in the U. S. by National Aniline under the trade-names, "Gardinol" and "Avirol," have also been granted to Proctor & Gamble, du Pont and the Gardinol Corp.

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### Chemists' Club Golf

Chemists' Club final golf Tournament for the 1932 Season will be held at the Pelham Country Club, Pelham, N. Y. on Wednesday, September 21.

Based upon a turn-out of 53 for the previous highly successful Rye Tournament, at least 75 entrants are expected for this event. Six handsome prizes will be awarded, divided between low gross, low net, kickers, etc. The President's Cup will be presented during dinner for the lowest net score for the year. Elon H. Hooker, president, Hooker Electrochemical, has one leg on the Cup, based upon his low net score at the last Tournament.

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## *Company News*

President E. L. Norton, Freeport Texas, on Aug. 15 stated that the company's plants at Freeport, Texas, have escaped damage from the storm which swept Southern Texas. Mr. Norton's statement follows: "While considerable damage was done in the town of Freeport, many houses being blown down and others damaged, the two plants of the Freeport Sulphur Co. located nearby escaped any serious damage and are both in full operation today. The company carries a complete line of cyclone insurance.

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Mallinckrodt Chemical, in addition to having taken large space for a commercial display, is sponsoring an exhibit in the electro-chemical section of the chemistry division at the 1933 "A Century of Progress" International Exposition at Chicago.

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Ford Chemical organized in Buffalo, N. Y., by Robert Ford, Clarence S. Williams and associates to operate a general chemical manufacturing business with headquarters at 354 Franklin St.

Fergusson Drug Co., Philadelphia, has developed a new synthetic organic compound, with a phenol co-ef of 162 plus. This material is non-toxic, non-corrosive, and non-irritant, and will no doubt on account of its low cost, find many uses. It is soluble in alcohol and organic solvents.

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Consolidated Cotton Oil chartered at Statesville, N. C., to manufacture cottonseed products with a capital of $100,000.

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Magnesium Products Elyria, which has been taken over by Cheney Chemical, Cleveland, started operations Sept. 1. Elyria plant has been in the hands of a receiver. It will be operated on a larger scale than heretofore, according to President M. B. Cheney, and will specialize on one product, the nature of which will be disclosed later.

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Heider Industrial Chemical of Columbus, Ohio, is moving from 286 North Third St. to 114 North Third St. to acquire larger quarters, and will increase size of its sales staff.

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Growers' Fertilizer Co., a new company at Fort Pierce, Fla., began fertilizer manufacturing operations Aug. 22. Plant will have a capacity of about 150 tons a day.

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Swanson Chemical Laboratories organized by Arthur A. Swanson and associates, to operate a general chemical manufacturing business and laboratory at Jamestown, N. Y.

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Marx & Rawelle creditors were reported as filing a petition in bankruptcy at New Haven on Aug. 22.

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Union Carbide & Carbon formed the Carbide & Carbon Chemicals, Ltd. a subsidiary, on July 27 with an authorized capitalization consisting of 5,000 shares of common stock of no par value. New company has appointed as sales agents for Canada, Shawinigan Chemicals, Ltd., Montreal, Canada, a subsidiary of Shawinigan Water & Power.

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Arthur S. Corbin of Passaic was named receiver for Belleville Chemical of Belleville, N. J., by Vice Chancellor Bigelow, the company consenting. Action was asked by the National Bank of America in Paterson, creditor on a note for $11,221. The company was organized in July, 1928, to manufacture chemicals and drugs, particularly synthetic camphor. Assets were placed at $50,000 and liabilities at $160,000.

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Magnesium Properties is erecting a magnesium salts refinery near Medicine Bow, Wyo. H. W. Zilmer, San Francisco, is in charge.

Standard Oil of N. J., whose domestic companies went on a five-day week July 1, has found benefits from the spreading out of work in respect to amelioration to some extent of the general unemployment problem. No decline in efficiency has been experienced.

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Detroit Steel Barrel consolidated on Aug. 10 with the Stevens Metal Products Co., of Niles, Ohio, and will operate as the "Detroit Division" of the latter company. F. H. Alger will continue in charge at Detroit.

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Tungsten Producers, Inc., Fruitland, Wash., is reported to have some finished product ready for shipment.

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R. T. Vanderbilt, N. Y. City is now marketing a new solvent-intensifier, called "Bondogen," for use in rubber-solvent cements and spreader doughs.

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Kessler Chemical moved its plant from Orange, N. J., to Delaware Ave. and Mifflin St., Philadelphia, on property belonging to the parent company, American Commercial Alcohol. J. M. Kessler, president, will remain at 405 Lexington Ave., N. Y. City, and O. B. Helfrich, vice president, will be located in Philadelphia.

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Lion Chemical, recently incorporated at Cincinnati, Ohio, will take over the Granitez Chemical Co., and established branches in ten leading cities.

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Delancy Chemical Corp., which is allied with Publiker Commercial Alcohol, formed to manufacture dry ice.

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General Dyestuffs, selling agent for General Aniline, has completed four new products known as Supranol Red PG, PRX, RA and PBX. Dyed from a glauber's salt-acetic acid bath they produce on woolen material bright reds, ranging from scarlet to bluish red and of very good fastness to water, washing, perspiration and salt water.

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Puritan Compressed Gas Corp., manufacturer of nitrous oxide, oxygen, and medicinal gases, Kansas City, is planning a substantial addition to its Baltimore plant.

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Monsanto Chemical Works, Ltd. has let a contract to the Metropolitan Vickers Co. for the construction of a high pressure steam plant and a power generating plant for their Raubon, North Wales works. This is part of the Company's expansion plan which includes a large warehouse and buildings and apparatus for the manufacture of some new products, which are not currently being produced in England. Program involves an expenditure of approximately $350,000.00.

Hydrocarbon Products elected an associate member of the N. F. A.

B. F. Drakenfeld & Co. is now producing an aluminum paste sold under the trade name "Globe" aluminum paste.

Standard Ultra-marine, Huntington, W. Va. started several weeks ago drilling a natural gas well on company property adjoining the plant, and their efforts were rewarded July 22 with the bringing in of a natural gas producer with an initial flow of about 1,000,000 cubic feet of gas daily. The flow will probably settle to about half that amount, it was stated, and that will be ample for the company's needs.

Two weeks later it was announced that drilling in the Monsanto Chemical Works plant at Nitro, W. Va., had been successful in bringing in a natural gas well with an estimated capacity of 1,000,000 cubic feet a day. Arrangements are promptly being made to put this gas under the boilers of the plant. It will replace coal formerly burned and will displace the natural gas previously purchased for process use in the operating departments. A considerable saving will be involved. In sinking the well large quantities of excellent brine solution were struck at the depth of about 1000 feet. It is possible this brine will prove an interesting chemical raw material.

Atmospheric Nytrogen will at once repair the recently burned portion of its plant, which was damaged about $25,000.

Monroe Louisiana Carbon at Hancock will resume operations Sept. 1 after being closed down for more than a year.

## *Personal*

Fred Somers, treasurer and general manager Fred L. Lavanburg Co., sailed for Europe recently on the Mauretania.

C. H. Dempwolf, Sr., president York Chemical Works, York, Pa., elected honorary member of the Independent Fertilizer Association.

J. J. Kerrigan, vice-president and general manager, Merck, arrived Aug. 29 on the Olympic following an extended trip abroad.

C. M. Styles, manager Newton Oil & Fertilizer, Newton, N. C., has severed his connection and will begin work as manager of the Statesville Cotton Oil Co. of Statesville, N. C. Mr. Styles was at one time associated with Southern Cotton Oil.

R. William Erwin, who resigned as superintendent of Canadian National Carbon, is now superintendent of the San Francisco works of National Carbon.

P. H. Cathcart, formerly associated with National Lead and secretary of Committee D-1 of the A. S. T. M., is now with Imperial Color.

The annual dinner of the Drug, Chemical and Allied Trades, N. Y. Board of Trade, will be held on Thursday, March 16, 1933.

Warren N. Watson, secretary, Manufacturing Chemists' Association, has announced that the standardized warning label adopted by the Container Committee may now be purchased in quantity.

### Hercules Changes

Hercules announced Aug. 4 the centralization of all divisions of Hercules experiment and research at the new experiment station near Wilmington.

The changes will bring all experiment activities in closer touch with the company's main offices and will enable more complete contact with industries using Hercules products, it is stated by Harry E. Kaiser, director of the experiment station.

The Kenvil, N. J., branch of the experiment station will cease to function as a separate organization and the Kenvil facilities will be taken over by the company's explosives department and placed under the jurisdiction of the adjacent Kenvil plant.

R. S. Hancock, assistant director in charge of explosives research, will be transferred to the main laboratories near Wilmington. The executive offices of the station will hereafter be at the Hercules home office, Delaware Trust Building, Wilmington.

### Research Centralized

With the completion of the reorganization all general research will be centered at Wilmington and all development work of an operating or sales nature will be carried on at the plants making the product involved. The new Hercules experiment station, which was completed and put in operation last year, is located on a 300-acre tract of land about five miles west of Wilmington.

W. H. Dickhart, 189 Franklin St., N. Y. City, appointed official chemist for the Olive Oil Association of America.

## CHEMICAL STATISTICS

| Year and month | General operations | | | | | Alcohol | | | By-product coke | Explosives | Rosin, wood | Turpentine, wood | Superphosphates | Fertilizer | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Employment F. R. B. Indexes | | | Stocks | | Ethyl | Refined methanol | Synthetic methanol | | | | | | Consumption [1] | Total imports | Nitrate of soda imports |
| | Unadjusted | Adjusted | Pay rolls, unadjusted | Manufactured goods | Raw materials | Production | | | | | | | | | | |
| | Monthly average, 1923-1925=100 | | | | | Thousands of gallons | | | Thous. of short tons | Thous. of lbs. | Barrels | | Thous. of short tons | Long tons | | |
| 1930: June | 101.8 | 105.7 | 105.3 | 128 | 95 | 13,116 | 418 | 562 | 3,928 | 33,546 | 40,049 | 6,774 | 356 | 79 | 89,547 | 18,737 |
| 1931: | | | | | | | | | | | | | | | | |
| June | 86.7 | 89.6 | 84.1 | 122 | 88 | 13,111 | 107 | 654 | 2,715 | 25,981 | 34,747 | 5,675 | 178 | 74 | 59,970 | 29,711 |
| July | 86.2 | 89.4 | 82.9 | 116 | 87 | 11,975 | 92 | 438 | 2,569 | 25,068 | 28,495 | 4,370 | 196 | 25 | 97,358 | 18,809 |
| August | 84.4 | 86.6 | 80.4 | 115 | 85 | 12,363 | 65 | 316 | 2,443 | 24,548 | 17,074 | 2,607 | 210 | 40 | 127,599 | 35,367 |
| September | 86.0 | 85.7 | 80.8 | 118 | 100 | 12,952 | 57 | 663 | 2,310 | 26,598 | 25,058 | 3,797 | 173 | 91 | 146,700 | 48,590 |
| October | 85.7 | 85.4 | 80.8 | 125 | 121 | 16,037 | 56 | 510 | 2,389 | 25,282 | 26,102 | 3,922 | 188 | 94 | 120,822 | 33,968 |
| November | 83.5 | 83.1 | 76.4 | 129 | 134 | 14,084 | 87 | 364 | 2,276 | 24,509 | 21,440 | 3,547 | 179 | 66 | 77,849 | 29,871 |
| December | 82.0 | 81.9 | 75.0 | 124 | 125 | 14,002 | 142 | 328 | 2,234 | 18,595 | 23,242 | 3,733 | 231 | 67 | 70,754 | 17,029 |
| 1932: | | | | | | | | | | | | | | | | |
| January | 81.7 | 81.9 | 71.4 | 128 | 116 | 13,224 | 149 | 586 | 2,101 | 18,175 | 23,196 | 3,626 | 215 | 172 | 89,070 | 30,114 |
| February | 81.1 | 80.2 | 71.0 | 135 | 107 | 10,340 | 120 | 546 | 1,996 | 18,064 | 20,006 | 3,121 | 204 | 365 | 84,160 | 8,404 |
| March | 81.1 | 78.6 | 70.1 | 134 | 102 | 9,526 | 103 | 514 | 2,089 | 17,092 | 26,187 | 4,329 | 170 | 644 | 100,136 | 54 |
| April | 82.4 | 78.5 | 68.5 | 134 | 97 | 10,137 | 113 | 502 | 1,883 | 16,804 | 26,443 | 4,415 | 147 | 868 | 61,433 | 2,675 |
| May | 78.3 | 79.7 | 66.9 | 133 | 93 | 11,578 | 72 | 743 | 1,743 | 17,097 | 30,597 | 5,151 | 86 | 156 | 84,746 | 37 |
| **June** | **74.2** | **76.4** | **63.2** | **119** | **91** | -------- | **97** | **713** | **1,537** | ---------- | **29,483** | **4,827** | ---------- | **68** | **57,388** | **647** |
| Monthly average, January through June: | | | | | | | | | | | | | | | | |
| 1930 | 108.6 | -------- | 109.0 | 136 | 104 | 11,713 | 413 | 538 | 4,148 | 32,685 | 41,739 | 7,608 | 399 | 859 | 190,025 | 68,769 |
| 1931 | 93.3 | -------- | 89.6 | 128 | 96 | 11,675 | 203 | 731 | 3,039 | 27,232 | 32,382 | 5,691 | 261 | 618 | 134,980 | 60,867 |
| **1932** | **79.8** | -------- | **68.5** | **131** | **101** | -------- | **109** | **601** | **1,892** | ---------- | **25,985** | **4,245** | ---------- | **379** | **79,489** | **6,989** |

[1] Southern States.

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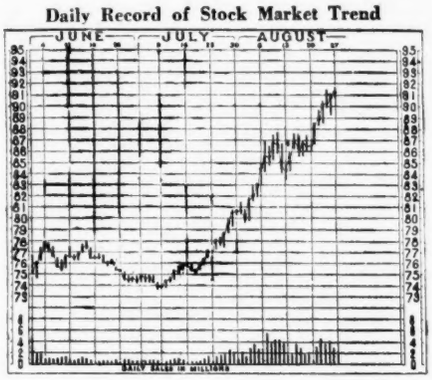
# *The Financial Markets*

**Stocks Again Rise Sharply in Active Market—Several Leading Companies Announce Dividend Reductions—Va.-Carolina Independent Stockholders' Committee Reports—Vanadium Retires $275,000 of its 10-year 5% Convertible Debentures—Chemical Markets Average Common Stock Price Near High for 1932**

In the most sensational market since the closing months of 1929 stocks and bonds registered the biggest advance in three years. On several days scenes reminiscent of the bull movement of 1928 and 1929 were enacted and the Street became imbued with a spirit of optimism that

**Daily Record of Stock Market Trend**




*—N. Y. Herald Tribune*

contrasted strangely with the utter feeling of hopelessness and despondency that had previously gripped the financial marts for months. Buoyed by mass psychology, as difficult of understanding as that which forced values down to less than one-tenth of their 1929 levels, stocks forged ahead continuously in the thirty day period with but two minor periods of deflection caused by profit-taking.

## Better Sentiment

The persistency of the rise was remarkable. Attempting to analyze the dominating reasons for the complete right about face in sentiment is a difficult assignment. Unquestionably a feeling has spontaneously developed that the country has seen the worst and is now ready and capable of going forward along the path of recovery. But why? While the accepted indices of business activity fail as yet to reflect increases in volume commensurate with the rise in the stock market, the public is cognizant of the fact that plants are reopening, men are being returned to work in increasing numbers, supplies of manufactured goods are low and substantial orders are replacing the puny hand-to-mouth buying policies that have been the order of the day. Of still greater significance and importance has been the steady rise in commodity prices. Sustained recovery in prices for raw materials in the last two months has given birth to the thought in the minds of those controlling purchases that good business acumen now dictates a policy of buying on a broader scale with a more liberal viewpoint on future commitments.

Other factors have contributed to the undercurrent of better feeling. Since the middle of June 40 per cent of the Reserve System's $471,000,000 loss of gold last Spring has been made good. Signs point to the end of the hoarding mania. The European situation has cleared perceptibly. The several bodies created by the last session, and led by the R. F. C., are now functioning. Resources are now mobilized. The credit structure of the country has been immensurably strengthened. The financial condition of the country has proven to be sound.

The extent of the improvement in prices is shown in part by a compilation of 240 stocks in twenty groups, made by *The New York Times*, which advanced $4,041,656,665, or 36 per cent, since the end of July, compared with an advance of $2,893,432,823, or 34 per cent, in July. Increases in values in the last two months according to this compilation, erased all the losses sustained since February.

Last month's swing upward compares with a gain of $4,465,381,600 in August, 1929, and $4,234,215,700 in June of the same year. Greater changes in prices have occurred in other months in the last three years, but they have been in declining markets. Among these were October, 1929, showing a drop of $9,514,295,377; June, 1930, down $6,684,266,664, and September, 1931, down $7,188,722,493.

## Present Values

Values this year have declined in five of the eight months and, since the end of September, 1929, in twenty-two of the thirty-five months. The decline to the end of June was 84 per cent. With the recovery in the last two months, values are now still 70 per cent below those obtaining at the end of September, 1929.

The average rise from the low point of July 8 to the high level of August was more than 100 per cent, while in some individual issues market values were tripled or quadrupled.

## Group Changes

The following table shows the net change in points in each group as well as the change in values.

| *Group and Number of Issues* | *August Avr. Net Ch'ge in Points* | *August Change in Values* |
|---|---|---|
| Amusements (5) | + 4.175 | + $41,766,278 |
| Building equip. (9) | + 3.153 | + 50,099,699 |
| Business equip. (4) | + 4.563 | + 28,386,090 |
| Chain stores (14) | + 2.991 | + 111,609,472 |
| **Chemicals (9)** | **+ 7.708** | **+ 250,100,073** |
| Coppers (15) | + 5.883 | + 256,262,489 |
| Depart. stores (10) | + 3.863 | + 37,929,260 |
| Foods (19) | + 3.901 | + 205,336,203 |
| Leathers (4) | + 3.625 | + 4,608,066 |
| Mail order (3) | + 4.958 | + 57,575,068 |
| Motors (15) | + 2.516 | + 275,768,705 |
| Motor equip. (7) | + 2.857 | + 16,538,865 |
| Oils (22) | + 1.551 | + 334,599,294 |
| Public utilities (29) | +10.871 | + 1,271,402,074 |
| Railroads (25) | +12.435 | + 668,326,247 |
| Railroad equip. (8) | + 3.437 | + 44,792,052 |
| Rubber (6) | + 4.896 | + 38,386,174 |
| Steels (13) | + 6.769 | + 223,269,615 |
| Sugars (9) | + 2.889 | + 20,840,786 |
| Tobaccos (14) | + 4.259 | + 104,060,155 |
| Aver. and total 240 issues | + 5.653 | +$4,041,656,665 |

## Chemical Stocks

Industrial chemical stocks contributed generously to the general appreciation of stock values. The total net gain for nine of the leading chemical companies amounted to $250,100,073 comparing with a gain of $168,785,625 in July and a net loss of $599,187,299 for the first six months of 1932. The net loss for the year now stands at $170,301,730 for the group.

## Price Trend of Chemical Company Stocks

| | *July 30* | *Aug. 6* | *Aug. 13* | *Aug. 20* | *Aug. 27* | *Net Change* |
|---|---|---|---|---|---|---|
| Allied Chemical | 58 | 69 | 73 | 75¾ | 84⅝ | +26⅝ |
| Air Reduction | 38¼ | 45¾ | 50¼ | 52¼ | 58⅞ | +20⅝ |
| Anaconda | 6¼ | 8⅝ | 8 | 8⅞ | 11¼ | + 5 |
| Columbian Carbon | 23¼ | 27¾ | 28½ | 29 | 33⅞ | +10⅝ |
| Com. Sol. | 7¼ | 8 | 8¾ | 9¼ | 10¼ | + 3 |
| Du Pont | 28⅞ | 33¼ | 34¼ | 34⅝ | 40½ | +11⅝ |
| Mathieson | 13⅜ | 14 | 15⅜ | 16 | 17½ | + 4⅜ |
| Monsanto | 20 | 23 | 22⅝ | 22⅞ | 23⅜ | + 3⅜ |
| Stand., N. J. | 29⅞ | 34¼ | 32⅝ | 33½ | 35¼ | + 5⅜ |
| Texas Gulf | 17⅞ | 19 | 20⅝ | 21¼ | 24 | + 6⅛ |
| U. S. I. | 20⅛ | 23⅞ | 25⅝ | 27¾ | 34 | +13⅞ |

The individual gains are given in the following table:

| | |
|---|---|
| Allied Chemical | $54,329,141 |
| Commercial Solvents Corp. | 7,274,359 |
| Davison Chemical Co. | 1,701,226 |
| Du Pont | 106,507,199 |
| Mathieson Alkali Works | 3,414,789 |
| Texas Gulf Sulphur | 13,972,200 |
| Union Carbide & Carbon | 57,633,762 |
| U. S. Industrial Alcohol | 4,906,702 |
| Virginia-Carolina Chemical | 360,695 |
| Total | $250,100,073 |

## Highs and Lows

The extent of the upward trend in values in the past seven weeks may be more fully appreciated by comparing the closing prices of the above listed stocks with the low for the year:

| | *Low 1932* | | *August Closing* | *Net Gain* |
|---|---|---|---|---|
| Allied Chem. | 42½ | June 27 | 80¾ | +38¼ |
| Com. Solvents | 3½ | May 28 | 9⅞ | + 6⅜ |
| Davison Chem. | 1 | May 26 | 7⅞ | + 6⅞ |
| DuPont | 22 | July 29 | 39 | +17 |
| Math. Alkali | 9 | June 1 | 18¾ | + 9¾ |
| Texas Gulf Sulf. | 12 | July 6 | 23½ | +11½ |
| Union Carbide | 15½ | May 31 | 26¾ | +11¼ |
| U. S. I. | 13¼ | June 2 | 33 | +19¾ |
| Va. Car. Chem. | ½ | Mar. 14 | 2 | + 1¾ |

## Adverse Factors

The advance in chemical stocks was not effected materially by the issuance of several important semi-annual statements showing, in most instances, sharp declines in earnings from the same period a year ago and by the lowering of the dividend rate of the common stock of du Pont. This is now on a $2 basis against the former rate of $3. Eastman Kodak also reduced the rate on its common and Atlas omitted the quarterly dividend on the common payable Sept. 10. Apparently the financial markets had discounted all the possible bad news in the dark weeks of May and June.

## Chemical Markets Av. Price

CHEMICAL MARKETS' Average Price for 15 representative industrial chemical common stocks advanced each week of the month. The Price stood as follows on the successive Fridays: July 20, $20.73; Aug. 6, $22.98; Aug. 13, $25.03; Aug. 20, $26.34; and Aug. 27, $29.57. The high point for this year was on Mar. 4 when the Price stood at $30.39, and the low point July 9, when it stood at $15.98. On Aug. 28, 1931 the Price stood at $44.60.

### Dividends and Dates

| *Name* | *Div.* | *Stock Record* | *Payable* |
|---|---|---|---|
| Amer. Home Prod. | .35 | Aug. 15 | Sept. 1 |
| Archer Daniels Mid. | .25 | Aug. 20 | Sept. 1 |
| Com'l Solvents | .30 | Nov. 21 | Dec. 31 |
| Drug, Inc. | $1.00 | Aug. 15 | Sept. 1 |
| DuPont, com. | .50 | Aug. 24 | Sept. 15 |
| DuPont, deb. | $1.50 | Oct. 10 | Oct. 25 |
| Eastman Kodak | .75 | Sept. 3 | Oct. 1 |
| Eastman Kodak, pf | $1.50 | Sept. 3 | Oct. 1 |
| Freeport, Texas | .50 | Aug. 15 | Sept. 1 |
| Glidden Co. pr pf. | $1.75 | Sept. 16 | Oct. 1 |
| Heyden Chemical | .25 | Aug. 22 | Sept. 1 |
| Heyden Chem., pf. | $1.75 | Sept. 22 | Oct. 1 |
| Kellogg, Spencer | .15 | Sept. 15 | Sept. 30 |
| Lehn & Fink | .50 | Aug. 15 | Sept. 1 |
| Mathieson Alkali | .37½ | Sept. 12 | Oct. 1 |
| Mathieson Alkali, pf | $1.75 | Sept. 12 | Oct. 1 |
| Monsanto Chem. | .31¼ | Sept. 10 | Oct. 1 |
| Nat'l Distillers Prod. pf. | $1.75 | Sept. 5 | Oct. 1 |
| Nat. Lead | $1.25 | Sept. 16 | Sept. 30 |
| Nat. Lead, pf A | $1.75 | Sept. 2 | Sept. 15 |
| Nat. Lead, pf B | $1.50 | Oct. 21 | Nov. 1 |
| Penick & Ford | .25 | Sept. 1 | Sept. 15 |
| Proctor & Gamble 5%, pf. | $1.25 | Aug. 25 | Sept. 15 |
| Sherwin & William pf. | $1.50 | Aug. 15 | Sept. 1 |
| Texas Gulf Sulfur | .50 | Sept. 1 | Sept. 15 |
| Union Carbide and Carbon | .30 | Sept. 2 | Oct. 1 |

## *Dividend Action*

Eastman Kodak declared a quarterly dividend of 75 cents on common stock and the regular quarterly distribution of $1.50 on its preferred stock. Both dividends are payable Oct. 1 to stock of record Sept. 3. The two preceding quarterly dividends this year were $1.25 each, the extra quarterly disbursement of 75 cents a share, which had been paid for some years, having been omitted at the February meeting. Dividend of 75 cents places the stock on a $3 annual basis.

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United Dyewood directors' meeting called for action on the preferred dividend, postponed to Sept. 8, due to a lack of quorum.

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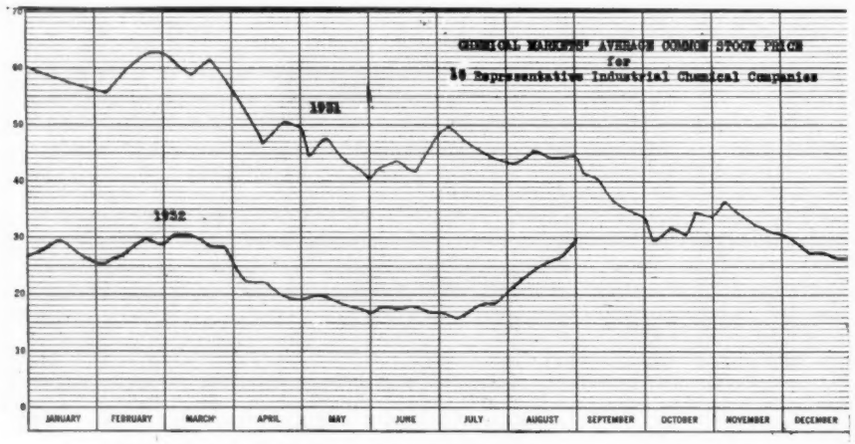
Commercial Solvents declared a semi-annual dividend of 30 cents on the common stock, payable Dec. 31 to stock of record Nov. 21. Previously the company had been paying quarterly dividends of 15 cents on the common.

It is stated that this dividend is declared instead of the usual quarterly dividend of 15 cents, hitherto payable on Sept. 30.




*The recovery in chemical common stock values was continued in August without any serious interruption*

Directors, in fixing a semi-annual period for future dividend distributions, were actuated by the substantial saving of time and money in preparation of dividend checks.

Number of stockholders is now in excess of 27,000 and the steadily increasing number of small shareholdings makes the cost of distributing dividends, increased by the recent postage and check tax, excessive in proportion to the amount of dividends involved.

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Union Carbide declared a dividend of 30 cents, payable Oct. 1 to stock of record Sept. 2. Three months ago a similar dividend was paid.

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Swift & Co. directors voted to omit regular quarterly dividend of 25 cents on the $25 par capital stock due Oct. 1.

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National Distillers voted a special dividend in the form of a distribution of warehouse receipts for pre-war whiskey. Delivery of the receipts will be made Oct. 1, 1934 to stockholders of record Sept. 15, 1934. The terms of the declaration call for one case of twenty-four pints of whiskey for each five shares of common stock. The company states that the sale and transfer of warehouse receipts for whiskies is specifically permitted by the terms of the Volstead Act.

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DuPont declared a quarterly dividend of 50 cents on the common stock, payable Sept. 15 to stock of record Aug. 24, placing the issue on a $2 annual basis, against $3 previously.

Regular quarterly dividend of $1.50 on the debenture stock was also declared, payable Oct. 25 to stock of record Oct. 10. The action of du Pont directors in reducing the quarterly common dividend to 50 cents reflects the decline in the company's own earnings as well as the shrinkage of income from its General Motors investment.

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Atlas Powder directors on Aug. 4 decided to omit the quarterly dividend ordinarily payable about Sept. 10 on the common stock, no par value. A distribution of 25 cents per share was made on June 10 last as compared with 50 cents per share on March 10, 1932 and $1 per share each quarter from Sept. 11, 1923 to and including Dec. 10, 1931. In addition, an extra dividend of $1 per share was paid on Jan. 10, 1927 and on Dec. 10, 1929.

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Hercules Powder directors on Aug. 31 declared a quarterly dividend of 37½ cents per share on the outstanding 606,234 shares of no par value common stock, payable Sept. 24 to holders of record Sept. 13. This compares with 50 cents per share paid on June 25 last and quarterly distributions of 75 cents per share made from March 25, 1929 to and incl. March 25, 1932. In addition,

an extra of $1 per share was paid on Dec. 24, 1929.

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Worcester Salt directors have voted to omit the quarterly dividend ordinarily payable about Oct. 1 on the common stock, par $100. From Jan. 2, 1923 to and incl. July 1, 1932 quarterly distributions of 1¼% were made on this issue. In addition, the company paid extras of 1% each in 1923 and 1924.

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Devoe & Reynolds announced that the dividend meeting scheduled for Aug. 31 has been postponed until Sept. 8 due to lack of quorum. The last quarterly dividends on the 7% cum. 1st pref. and 2d pref. stock were paid July 1.

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## Glidden Debentures

Glidden so far in its fiscal year has purchased and retired $1,000,000 of its 5½% debentures, which, added to the $500,000 purchased in the previous year, leaves $4,500,000 outstanding of the original $6,000,000 issue. In addition, company has purchased for retirement 2,500 shares of prior preferred stock.

Adrian D. Joyce, president, states that at the same time Glidden still has $2,000,000 in cash on hand, with a ratio of current assets to current liabilities of 13 to 1. Business has shown quite a pickup in July, Mr. Joyce said, and the strength in commodity prices is very encouraging.

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## Fertilizer Merger Status

Va. Carolina Chemical independent stockholders' committee rejected the proposals of a minority group of prior preference stockholders in a report issued in the last week of August. Liquidation in its entirety of Virginia-Carolina Chemical Corp. as proposed by a minority group of prior preference stockholders, is "impractical, destructive of existing values and impossible of accomplishment," according to the report of the special committee of five stockholders, appointed independent of the management on July 11. Liquidation, the report declares, under conditions now prevailing would decrease the value of assets by millions of dollars, through loss in collection of receivables, sale of inventory, and reduction to junk value of physical properties. Good will would be completely destroyed. The committee endorses the management's plan of merger with Armour Fertilizer as in the interest of all classes of shareholders and unanimously recommends approval of the plan.

Through liquidation, approval for which could not be obtained the report says, the first $11,000,000 of available cash would be required for retirement of prior preference shares, leaving junior shareholders with idle plants, some investments in subsidiaries and certain current assets which could not easily be converted into cash. The 6% preferred stockholders would be entitled to $26,000,000, or an amount largely in excess of total remaining assets. The common stockholders would be entirely eliminated and they would not consent to such a course. If liquidation is considered at all, it is pointed out, it should be after, not before the proposed merger is consummated. Consummation of the merger agreement, the report says, makes it possible for the corporation to distribute immediately a large part of cash assets freed from operations of the fertilizer business.

The committee points out that the corporation's directors on July 28 voted to purchase from prior preference stockholders, upon consummation of the merger with Armour Fertilizer, not more than one-half of their holdings at $70 a share plus accrued or accumulated dividends. Should less than half be offered for sale by some holders, the company could take additional offerings from other stockholders, so that not in excess of a total of 50,050 shares would be acquired.

The committee states that with retirement of one-half of the prior pref. stock annual dividend requirements ahead of the 6% pref. stock will be reduced to approximately $350,000 per annum, increasing materially the possibility of junior shareholders receiving dividends on their holdings.

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## Over the Counter Prices

| | July 30 | | August 31 | |
|---|---|---|---|---|
| | Bid | Asked | Bid | Asked |
| J. T. Baker | 9 | 13 | 8 | 12 |
| Dixon | 23 | 30 | 26 | 32 |
| Merck, pfd. | 47 | 52 | 59 | 64 |
| Solid C | 1 | 2 | 1 | 2 |
| Young, J. S., pfd. | 74 | .. | 74 | .. |

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## Vanadium Convertibles

Vanadium retired on Aug. 15, $275,000 par value of the 10-year 5% convertible sinking fund gold debentures of the corporation, in addition to the $334,000 par value retired in February of this year, making a total of $609,000 par value of these debentures retired to date.

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## McK. & R. Earnings

McKesson & Robbins, in the first half of 1932, more than covered the interest on its debentures, although the report, to be issued shortly, is not likely to show much earned on the preferred stock. Amortization of the debenture issue, which originally amounted to $22,000,000, is reducing the total in the hands of the public, and the June 30, 1932, statement is likely to show this indebtedness reduced to less than $21,000,000. On June 30, 1931, it stood at $21,355,000, and at the end of 1931 it was $21,038,000.

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Liquid Carbonic common stockholders at a special meeting in Chicago approved a plan to reduce the amount of capital represented by no par shares of stock to $30 a share from $40.92. Reduction permits transfer of approximately $6,615,489 to capital surplus from capital account, leaving approximately $10,272,180 as stated capital.

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Ruhr Chemical of Germany, acting through its fiscal agent, Dillon Read announced that the corporation will redeem $106,000 principal amount of its 6% sinking fund mortgage bonds, series A, due April 1, 1948. The bonds designated by number for redemption will be taken up by Dillon Read & Co. at the latter's office in N. Y. City on Oct. 1 at 100% with interest coupons maturing Oct. 1, continuing to be payable to bearer. Redemption may also be made in London, Amsterdam or Zurich, at option of bearer, for sight exchange on New York on day of presentation for collection.

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## A. A. C. Capitalization

American Agricultural Chemical advised the N. Y. Stock Exchange of a proposed reduction in the authorized capital stock (no par value) from 2,000,000 shares to 500,000 shares.

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Heyden Chemical directors declared a dividend of 25 cents per share on the common stock, payable Sept. 1 to holders of record Aug. 22. Similar payments were made in the two previous quarters. The regular quarterly dividend of $1.75 on the pref. stock has also been payable Oct. 1 to holders of record Sept. 22.

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## Silica Gel Notes

Silica Gel will not pay the Five-Year 6½% Gold Notes on Oct. 1, 1932; and Davison Chemical, guarantor of the notes, will not pay them in cash. Davison Chemical proposes to authorize the issue of $3,400,000 of its Five-Year 6½% Gold Notes, to be dated Oct. 1, 1932, and to exchange, par for par, the notes so to be issued, for the outstanding notes of The Silica Gel Corp.

Notes will be redeemable at any time, on 30 days' notice, at par and accrued interest, plus an amount equal to one-quarter of one per cent. of the principal amount of the notes, for each period of six months or fraction thereof, of the unexpired time.

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## Foreign Markets

| London | July 30 | August 31 |
|---|---|---|
| British Celanese | 6s | 9s |
| Celanese | 16s | 40s |
| Courtaulds | £1⅛ | £1⅝ |
| Distillers | 48s 9d | 51s 9d |
| Imperial Chemical | 17s | 19s 1½d |
| Un. Molasses | 6s 3d | 9s |
| **Paris** | | |
| Kuhlmann | 510 | 530 |
| L'Air Liquide | 900 | 900 |
| **Berlin** | | |
| I.G. Farm | 90 | 95 |

# Earnings at a Glance

| Company | Annual Dividends | Net Income 1932 | Net Income 1931 | Common Share Earnings 1932 | Common Share Earnings 1931 |
|---|---|---|---|---|---|
| Air. Reduc. Co.: | | | | | |
| June 30 quarter.... | $3.00 | $588,996 | $1,026,451 | $ .70 | $1.22 |
| Six months, June 30 | 3.00 | 1,241,210 | 2,045,491 | 1.47 | 2.43 |
| Alum. Indus., Inc.: | | | | | |
| Six months, June 30 | f.... | †19,062 | 102,600 | .... | 1.02 |
| Amer. H. Prod.: | | | | | |
| Six months, June 30 | $4.20 | $1,448,512 | $1,694,983 | $2.37 | $2.77 |
| Atlas Powder: | | | | | |
| June 30 quarter.... | z.25 | †75,168 | 251,829 | .... | .39 |
| Six months, June 30 | z.25 | †154,398 | 409,120 | .... | .43 |
| Certain-teed Products Corp.: | | | | | |
| June 30 quarter.... | f.... | †328,776 | 33,268 | .... | p.53 |
| Six months, June 30 | f.... | †840,713 | †200,624 | .... | .... |
| Dow Chemical Co.: | | | | | |
| Year, May 31..... | 2.00 | 2,070,884 | 2,377,200 | 2.95 | 3.44 |
| Indus. Rayon: | | | | | |
| June 30 quarter.... | 2.00 | †292,461 | 51,498 | .... | .35 |
| Six months, June 30 | 2.00 | †114,812 | 64,862 | .... | .44 |
| Lehn & Fink Prod.: | | | | | |
| Six months, June 30 | 2.00 | 629,372 | 777,300 | 1.50 | 1.85 |
| Liquid Carbonic: | | | | | |
| Twelve months, June 30..... | 1.00 | 533,921 | 977,368 | 1.56 | 2.85 |
| Newport Indus.: | | | | | |
| June 30 quarter.... | f.... | †79,042 | ..... | .... | .... |
| Six months, June 30 | f.... | †135,583 | ..... | .... | .... |
| Proctor & Gamble Co.: | | | | | |
| Year, June 30..... | 2.00 | 9,132,545 | 22,650,818 | 1.26 | 3.37 |
| United Carb. Co.: | | | | | |
| June 30 quarter.... | f.... | †42,969 | †56,546 | .... | .... |
| Six months, June 30 | f.... | ‡104,636 | †34,288 | .... | .... |
| United Chem., Inc.: | | | | | |
| Six months, June 30 | f.... | †12,163 | 192,383 | .... | .... |
| U. S. Gypsum Co.: | | | | | |
| Six months, June 30 | 1.60 | 963,789 | 2,241,560 | h.57 | h1.62 |
| Westvaco Chlorine Products: | | | | | |
| July 2 quarter..... | f.... | 67,532 | 153,243 | h.10 | h.51 |
| Six months, July 2. | f.... | 176,578 | 376,682 | h.35 | h1.33 |
| | | *1931* | *1930* | *1931* | *1930* |
| Amer. I. G. Chemical: | | | | | |
| Year, March 31... | f.... | 1,718,397 | 2,322,952 | a$2.18 | a$2.95 |

fNo common dividend.
zLast dividend declared.
†Net loss.
aOn class A stock.
‡Profit before Federal Tax.

# Company Reports

Columbian Carbon and subsidiaries report for six months ended June 30, net income of $469,945 after depreciation, depletion, federal taxes and minority interests, equivalent to 87 cents a share on 538,420 shares of no-par stock. This compares with $859,732, or $1.60 a share on 537,745 shares in first half of previous year.

For quarter ended June 30, net income was $191,991 after charges and taxes, equal to 36 cents a share on 538,420 shares, comparing with $277,954, or 51 cents a share on 538,420 shares in preceding quarter and $299,231, or 55 cents a share on 537,745 shares in quarter ended June 30, 1931.

Consolidated income account for six months ended June 30, compares as follows:

| | 1932 | 1931 | 1930 | 1929 |
|---|---|---|---|---|
| Net aft fed tax | $1,032,431 | $1,616,018 | $2,492,163 | $3,254,760 |
| Depr & depl | 600,562 | 799,368 | 771,447 | 1,013,422 |
| Min int | *38,076 | *43,082 | 127,536 | 155,748 |
| Nt inc | $469,945 | $859,732 | $1,593,180 | $2,085,590 |

Quarter ended June 30:

| | 1932 | 1931 | 1930 | 1929 |
|---|---|---|---|---|
| Net aft fed tax | $431,656 | $650,168 | $1,237,187 | $1,656,391 |
| Dpre & depl | 250,282 | 390,716 | 381,409 | 546,857 |
| Min int | *10,617 | *39,779 | 72,603 | 83,902 |
| Net inc | $191,991 | $299,231 | $783,175 | $1,025,632 |

*Credit.

Southern Acid and Sulfur for the year ended December 31, 1931, reports net income after expenses and other charges, $89,047, equal, after preferred requirements, to 8 cents a share on 48,291 common shares, compared with $385,142, equal to $5.77 a share on 48,283 common shares, in 1930.

## A. A. C. Reports Net Loss of $1,224,056

American Agricultural Chemical and subsidiary companies for year ended June 30, shows net loss of $1,224,056 after depreciation, depletion, reserves for doubtful receivables, interest, etc. This compares with net loss of $782,172 in preceding fiscal year.

Current assets of June 30, including $3,632,803 cash, amounted to $13,436,298 and current liabilities were $445,016. This compares with cash of $5,978,698, current assets of $19,846,934 and current liabilities, including reserve for federal taxes, of $818,184 on June 30, 1931.

Consolidated income account for year ended June 30, 1932, compares as follows:

| | 1932 | 1931 |
|---|---|---|
| Operating loss | $147,587 | *$972,050 |
| Depreciation and depletion | 609,322 | 684,921 |
| Res. for insur | 107,550 | ..... |
| Res for doubtful rec | 325,000 | 502,746 |
| Interest | 34,597 | 566,555 |
| Net loss | $1,224,056 | $782,172 |

*Profit.

Consolidated balance sheet, as of June 30, compares as follows:

**Assets**

| | 1932 | 1931 |
|---|---|---|
| *Land, bldgs, mach & eq | $4,834,101 | $5,280,877 |
| *Phosphate rock deposits | 1,718,672 | 1,738,313 |
| *Prop not required for oper purposes | 1,015,630 | 1,166,257 |
| *Purch mon oblig & sundry invest | 1,269,228 | 1,313,950 |
| Goodwill, brands & trademarks | 1 | 1 |
| Cash | 3,632,803 | 5,978,698 |
| Accts & notes rec | 5,808,901 | 8,097,240 |
| Inventories | 3,994,587 | 5,770,996 |
| Sink fund for redemp of mtg bonds & trust funds | ..... | 947 |
| Deferred charges | 395,370 | 369,763 |
| Total | $22,669,293 | $29,717,042 |

**Liabilities**

| | | |
|---|---|---|
| Capital stock | †$12,684,840 | $12,715,000 |
| Funded debt | ..... | 5,365,500 |
| Accts pay & accrd liab | 445,016 | 560,837 |
| Accrued interest | ..... | 172,985 |
| Deferred credits | 19,339 | 94,850 |
| Contingent reserve | 2,281,286 | 2,280,760 |
| Federal tax reserve | ..... | 84,363 |
| Capital surplus | 7,764,470 | 7,744,349 |
| Earned surplus | ‡525,658 | 698,398 |
| Total | $22,669,293 | $29,717,042 |

*After reserves. †Represented by 317,121 shares issued or issuable, including shares reserved for capital stock of predecessor company not yet exchanged, but excluding 754 shares in treasury. ‡Deficit.

## Solvay Investment's Assets $91,047,612

Solvay-American Investment Corp.'s chief investment, Allied Chemical & Dye common, has shown an appreciation of some $21,800,000 since June 30. On June 30 the 499,696 shares of Allied, which cost $70,567,930, had a market value of $22,923,575, with the stock quoted at 45 7/8, against valuation of $44,725,224, with the stock at the current high around 81½. Holdings of Allied account for the bulk of Solvay-American's investment portfolio and were carried on June 30, 1932 as follows:

| | |
|---|---|
| Deposited as collateral or in safekeeping: | |
| 366,488 shares at $135 | $49,475,880 |
| 37,564 shares at stock dividend | |
| 23,600 shares at $245 | 5,782,000 |
| 3,149 shares at stock dividend | |
| Held in escrow: | |
| 62,490 shares at $245 | 15,310,050 |
| 6,405 shares as stock dividend | |
| Total 499,696 shares | 70,567,930 |

Balance sheet of Solvay-American investment as of June 30, 1932 shows total assets of $91,047,612. Investments were divided as follows:

| | June 30, 1932 Total cost | June 30, 1932 Mkt. value | March 31, 1932 Total cost | March 31, 1932 Mkt. value |
|---|---|---|---|---|
| Invest & holding cost | $1,806,979 | $61,751 | $1,806,979 | $131,422 |
| Banks & trust cost | 1,477,889 | 283,317 | 1,477,889 | 497,298 |
| Foreign | 151,427 | 151,427 | 151,427 | 151,427 |
| Solvay-Am. pf. | 65,040 | 24,500 | 65,040 | 35,700 |
| Special* | 73,419,995 | 23,057,736 | 73,419,995 | 37,408,178 |
| Total | 76,921,330 | 23,578,731 | 76,921,330 | 38,224,025 |

Shawinigan Water & Power for six months ended June 30, 1932, reports net income of $1,159,382 after depreciation, interest, estimated taxes, etc., equal to 53 cents a share on 2,178,250 no-par shares of capital stock. This compares with $1,968,674 or 90 cents a share in the first six months of 1931.

## Atlas Powder Reports Loss in First Half

Atlas Powder and subsidiaries report for six months ended June 30, net loss of $154,398 after depreciation, taxes, etc. This compares with net profit in first six months of 1931 of $409,120, equivalent after dividend requirements on 6% preferred stock, to 43 cents a share on 261,438 no-par shares of common stock.

Net loss for quarter ended June 30, was $75,168 after depreciation, taxes, etc., comparing with net loss of $79,230 in preceding quarter, and net profit of $251,829 or 39 cents a common share in second quarter of previous year, after preferred dividends.

Consolidated income account for six months ended June 30, compares as follows:

| | *1932* | *1931* | *1930* | *1929* |
|---|---|---|---|---|
| Net sales | $4,139,464 | $6,515,708 | $8,664,190 | $11,183,821 |
| ‡Net loss | 154,398 | *409,120 | *725,023 | *1,194,726 |
| Pfd dividends | 295,827 | 295,919 | 270,000 | 270,000 |
| Deficit | $450,225 | †$113,201 | †$455,023 | †$924,726 |

*Profit. †Surplus. ‡After taxes, depreciation, etc.

## United Carbon Quarterly Earnings $42,969

United Carbon and subsidiaries report for quarter ended June 30, profit of $42,969 after depreciation and depletion, but before federal taxes, comparing with profit of $61,667 in preceding quarter and net loss of $56,546 in June quarter of previous year.

For six months ended June 30, profit before federal taxes was $104,636 against net loss of $34,288 in first half of 1931.

Consolidated income account of United Carbon and subsidiaries for six months ended June 30, compares as follows:

| | *1932* | *1931* |
|---|---|---|
| Operating profit | ..... | $324,858 |
| Other income | ..... | 43,241 |
| Total income | $435,965 | $368,099 |
| Depreciation and depletion | 331,329 | 402,387 |
| Profit before federal tax | $104,636 | *$34,288 |

*Loss.

## Commercial Solvents Profits Higher

Commercial Solvents reports for quarter ended June 30, net profit of $295,820 after depreciation, federal taxes and reserves equivalent to 12 cents a share on 2,530,200 no-par shares of common stock. This compares with $293,454, or 11 cents a share on 2,530,174 shares in preceding quarter and $644,799, or 25 cents a share on 2,529,996 shares in June quarter of 1931.

For six months ended June 30, net profit was $589,274 after taxes and charges, equal to 23 cents a share on 2,530,200 shares comparing with $1,182,343, or 46 cents a share on 2,529,996 shares in first half of previous year.

Archer-Daniels-Midland Co. and subsidiaries as of June 30, 1932, shows total assets of $19,712,156, comparing with $19,605,635 on June 30, 1931, and surplus of $5,796,610 against $5,548,150. Current assets, including $3,057,700 cash and United States Treasury certificates, amounted to $9,492,269, and current liabilities were $778,060.

## Vanadium Has a Poor Half Year

Vanadium and subsidiaries report for six months ended June 30, net loss of $801,627 after depreciation, interest, and other charges. Above figures is after crediting the account wih a profit of $77,976 on purchase and retirement of corporation's own, debentures and after deducting $45,682 loss on sale of securities. In first half of 1931, net loss was $129,836 after depreciation, interest, etc.

Current assets as of June 30, including $1,611,525 cash and marketable securities, amounted to $5,164,296, and current liabilities were $321,647. This compares with cash and marketable securities of $2,645,082, current assets of $7,093,114 and current liabilities of $270,249 on June 30, of previous year.

Consolidated income account for six months ended June 30, compares as follows:

| | *1932* | *1931* | *1930* | *1929* |
|---|---|---|---|---|
| Net sales | $639,231 | $1,572,852 | ..... | ..... |
| Costs and exp | 1,184,226 | 1,535,063 | ..... | ..... |
| Oper loss | $544,995 | †$37,789 | †$845,883 | †$1,387,09 |
| Prof on debs retired | 77,976 | ..... | ..... | ..... |
| Other inc | 39,882 | 69,091 | *743,045 | 126,388 |
| Loss | $427,137 | †$106,880 | †$1,588,928 | †$1,513,484 |
| Dep, tax, etc | 216,682 | 159,589 | 338,691 | 335,796 |
| Loss on sale secur | 45,682 | ..... | ..... | ..... |
| Interest | 111,844 | 77,127 | ..... | ..... |
| Loss | $801,627 | $129,836 | †$1,250,237 | †$1,177,688 |
| Dividends | ..... | 274,977 | 538,705 | 564,955 |
| Deficit | $801,627 | $404,813 | ‡$711,532 | ‡$612,733 |

*Includes profit on resale of company's own stock. †Profit. ‡Surplus.

Westvaco Chlorine and subsidiaries for six months ended July 2, shows net profit of $176,578, after depreciation, federal taxes, etc., equivalent after dividend requirements on 7% preferred stock, to 35 cents a share on 284,962 no-par shares of common stock. This compares with $376,682 or $1.33 a share on 225,155 common shares for the six months ended June 27, 1931. Net profit for quarter ended July 2, was $67,532 after charges and taxes, equal to 10 cents a share on 284,962 common shares comparing with $109,046 or 25 cents a share on 284,962 common shares in preceding quarter, and $153,243 or 51 cents a share on 225,155 common shares for the quarter ended June 27, 1931.

Consolidated Chemical Industries, reports for six months ended June 30, net profit of $157,320 after depreciation, federal taxes, etc., equivalent after allowing for dividend requirements on the $1.50 no-par Class A preference stock to 4 cents a share on 80,000 no-par shares of Class B common stock. For first six months of 1931 net profit was $238,544 equal under the participating provisions of the shares to 84 cents a share on 285,000 combined shares of Class A and Class B stock.

For quarter ended June 30, net profit was $77,751 after taxes and charges, equal after Class A dividend requirements to 1 cent a share on the Class B common stock, comparing with $79,569 or 3 cents a share on the Class B in preceding quarter and $122,449 or 43 cents a share on the combined stock in the second quarter of 1931, under the participating provisions.

## *Semi-Annual Reports Analyzed*

| | *Interest times earn.* | *Pfd. div. times earned* | *Cash and mark. securities* | *inventories* | *Ratio cur. assets to cur. liab.* | *Working capital* |
|---|---|---|---|---|---|---|
| Atlas Powder Co.: | | | | | | |
| Six months, June 30, 1932 | No fd. dbt. | *.... | 4,965,283 | 1,964,869 | 21.2 | 8,681,870 |
| Six months, June 30, 1931 | No fd. dbt. | 1.38 | 4,826,832 | 2,432,551 | 14.2 | 9,506,922 |
| Certain-teed Products: | | | | | | |
| Six months, June 30, 1932 | a.... | *.... | 3,006,993 | 1,873,236 | 9.5 | 5,975,747 |
| Six months, June 30, 1931 | 0.47 | *.... | †2,929,600 | 3,106,635 | 10.1 | 8,215,065 |
| Devoe & Raynolds Co., Inc.: | | | | | | |
| Six months, May 31, 1932 | No fd. dbt. | 0.17 | 1,114,518 | 2,823,031 | 11.0 | 6,279,968 |
| Six months, May 31, 1931 | No fd .dbt. | 2.14 | 1,053,735 | 3,517,129 | 10.5 | 7,283,324 |
| du Pont de Nemours & Co., E. I.: | | | | | | |
| Six months, June 30, 1932 | d.... | 4.36 | h51,092,794 | 32,298,345 | 10.5 | h90,606,920 |
| Six months, June 30, 1931 | d.... | 9.30 | h65,563,546 | 34,925,365 | 12.1 | h113,371,283 |
| Industrial Rayon: | | | | | | |
| Six months, June 30, 1932 | c21.68 | *.... | 3,097,129 | 1,524,792 | 9.9 | 4,854,861 |
| Six months, June 30, 1931 | c8.38 | f0.22 | †2,998,850 | 1,530,188 | 6.4 | 4,780,292 |
| United Carbon Co.: | | | | | | |
| Six months, June 30, 1932 | No fd. dbt. | 1.64 | †436,474 | 1,738,675 | 3.5 | 2,370,751 |
| Six months, June 30, 1931 | No fd. dbt. | *.... | †649,836 | 2,421,260 | 4.1 | 2,942,410 |

*Loss before dividend requirements. a Loss before interest.
†Cash only. d Company has 20 direct funded debt. cInterest on debt of subsidiary.

# The Industry's Stocks

| 1932 August Last | 1932 High | 1932 Low | 1931 High | 1931 Low | Sales In August | Sales During 1932 | ISSUES | Par $ | Shares Listed | An. Rate | Earnings $-per share-$ 1931 | Earnings $-per share-$ 1930 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **NEW YORK STOCK EXCHANGE** | | | | | |
| 60¼ | 61⅞ | 49 | 62½ | 30⅞ | 197,200 | 834,900 | Air Reduction | No | 841,288 | $3.00 | 4.54 | 6.32 |
| 84¼ | 86 | 55⅓ | 87⅓ | 42⅜ | 644,700 | 3,567,100 | Allied Chem. & Dye | No | 2,401,000 | 6.00 | 6.74 | 9.77 |
| 114¼ | 116½ | 109½ | 119 | 96⅓ | 2,400 | 20,100 | 7% cum. pfd. | 100 | 393,000 | 7.00 | | |
| 13⅞ | 14½ | 6½ | 14¼† | 3½ | 14,100 | 35,700 | Amer. Agric. Chem. | 100 | 333,000 | | Yr. Je. '30 | Nil |
| 19½ | 20⅞ | 14¼ | 20¾† | 11 | 100,900 | 410,200 | Amer. Com. Alc. (new) | 20 | 375,000 | | | d1.27 |
| 41⅞ | 42⅞ | 34 | 51⅜ | 25 | 43,500 | 182,035 | American Home Products | No | 611,000 | .42 | | |
| 19⅞ | 20⅞ | 11⅞ | 20¼† | 5½ | 249,500 | 627,600 | Amer. Smelt. & Refin. | No | 1,828,314 | | 1.75 | 3.77 |
| 55 | 55 | 39 | 85 | 22 | 9,200 | 32,600 | 7% cum. pfd. | 100 | 500,000 | | | |
| ... | ... | ... | ⅜ | ⅛ | | 76,200 | Amer. Solvents & Chem | No | 503,000 | | | d2.86 |
| 13½ | 13⅞ | 11 | 13¾† | 7 | 5,600 | 31,800 | Archer Dan. Midland | No | 550,000 | 1.00 | Yr. Aug. 30 | 1.68 |
| 1⅛ | 1⅛ | 1 | 1⅛† | ⅜ | 44,700 | 214,100 | Armour & Co. (Del.) | No | 50,000,000 | | | |
| 16 | 16½ | 11 | 25½ | 7½ | 4,800 | 26,800 | Atlas Powder Co. | No | 261,438 | | .59 | 2.67 |
| 69 | 69 | 68 | 79½ | 45½ | 80 | 4,640 | 6% cum. pfd. | 100 | 96,000 | 6.00 | | |
| 4⅞ | 5½ | 2¾ | 5½† | 1½ | 11,100 | 40,300 | Celanese Corp. of America | No | 1,000,000 | | | |
| 4⅞ | 4⅞ | 2 | 3⅜ | 1 | 1,300 | 16,600 | Certain-Teed Products | No | 400,000 | | | d7.61 |
| 18⅜ | 18⅜ | 18 | 18⅜† | 8 | 200 | 1,500 | 7% cum. pfd. | 100 | 63,000 | | | |
| 17⅞ | 17⅞ | 13¼ | 31½ | 11 | 76,000 | 244,500 | Colgate-Palmolive-Peet | No | 2,000,000 | 2.50 | | 3.76 |
| 35¼ | 35⅝ | 21⅜ | 41⅞ | 13½ | 194,300 | 576,900 | Columbian Carbon | No | 538,420 | 2.00 | 3.02 | 5.04 |
| 10½ | 10⅝ | 6¼ | 10⅜† | 3½ | 376,000 | 1,116,100 | Comm. Solvents | No | 2,530,000 | .60 | .83 | 1.07 |
| 48¾ | 49½ | 34⅜ | 49½ | 29¾ | 167,000 | 611,000 | Corn Products | 25 | 2,530,000 | 3.00 | 3.54 | 4.82 |
| ... | 126 | 121 | 129½ | 99½ | 330 | 6,630 | 7% cum. pfd. | 100 | 250,000 | 7.00 | | |
| 5⅛ | 5⅛ | 2¼ | 5⅛ | 1 | 26,800 | 102,500 | Davison Chem. Co. | No | 504,000 | | Yr. Je. '30 | 4.00 |
| 74 | 74 | 70½ | 95 | 59⅞ | 40 | 5,140 | Devoe & Raynolds "A" | No | 160,000 | | | 2.24 |
| 12 | 12 | 9 | 13½ | 7 | 500 | 790 | 7% cum. 1st pfd. | 100 | 16,000 | 7.00 | | |
| 46⅞ | 47½ | 32½ | 57 | 23 | 225,100 | 1,229,000 | Drug, Inc. | No | 3,501,000 | 4.00 | | |
| 40⅜ | 41½ | 27⅞ | 59⅜ | 22 | 107 | 50⅜ | 972,800 | 4,731,264 | DuPont de Nemours | 20 | 11,008,512 | 2.00 | 4.29 | 4.67 |
| 105½ | 105¼ | 88⅜ | 105½† | 80⅜ | 185⅜ | 91⅜ | 5,500 | 41,700 | 6% cum. deb. | 100 | 1,098,831 | 6.00 | | |
| 62 | 62 | 43¼ | 87⅞ | 35¼ | 185¾ | 77 | 287,100 | 1,280,000 | Eastman Kodak | No | 2,261,000 | 5.00 | 5.78 | 8.84 |
| 112½ | 112½ | 111 | 119½ | 99 | 135 | 103 | 230 | 1,825 | 6% cum. pfd. | 100 | 62,000 | 6.00 | | |
| 25⅛ | 25⅞ | 16 | 25⅞ | 10 | 43½ | 13¼ | 103,800 | 328,925 | Freeport Texas Co. | No | 730,000 | 2.00 | 3.26 | w4.77 |
| 7⅜ | 7⅜ | 4½ | 7⅜† | 3¼ | 16½ | 4½ | 16,100 | 61,500 | Glidden Co. | No | 695,000 | | Yr. Oct. '30 | Nil |
| ... | 68 | 54⅛ | 68† | 35 | 80 | 40 | 390 | 1,450 | 7% cum. prior pref. | 100 | 74,000 | 7.00 | Yr. Oct. '30 | Nil |
| 24⅜ | 25 | 13⅛ | 28½ | 13⅞* | 43½ | 13½ | 2,600 | 10,500 | Hercules Powder Co. | No | 606,234 | 2.00 | 1.04 | 2.61 |
| 90 | 90 | 82 | 95 | 70½ | 119½ | 95 | 120 | 2,780 | 7% cum. pfd. | 100 | 114,241 | 7.00 | | |
| 28⅞ | 29⅜ | 14 | 38⅜ | 7¼ | 86 | 21 | 62,800 | 236,700 | Industrial Rayon | No | 200,000 | 2.00 | | 7.74 |
| 3½ | 3½ | ⅞ | 3½† | ⅛ | 5¼ | 1 | 4,300 | 15,100 | Intern. Agric. | No | 450,000 | | Yr. Je.'30 | 1.68 |
| 12 | 12½ | ⅞ | 12½† | 3½ | 51¼ | 4½ | 1,500 | 6,300 | 7% cum. prior pfd. | 100 | 100,000 | 7.00 | Yr. Je.'30 | 14.58 |
| 1⅛ | 1⅛ | ⅜ | 1⅛ | ⅜ | | | 35,400 | 132,800 | Intern. Combustion | No | 1,049,513 | | | |
| 9⅛ | 10½ | 6 | 10½† | 3½ | 20¼ | 7 | 877,050 | 2,069,550 | Intern. Nickel | No | 14,584,000 | | .22 | .67 |
| 17 | 17⅛ | 12 | 23½ | 9¼ | 42 | 18 | 13,900 | 52,500 | Intern. Salt | No | 240,000 | 1.50 | | |
| 9½ | 9½ | 8 | 10 | 8 | 16½ | 9 | 500 | 14,900 | Kellogg (Spencer) | No | 598,000 | .60 | | h1.14 |
| ½ | ½ | 3-32 | 9⅛ | 1-32 | | | 480,500 | 4,279,630 | Kreuger & Toll | | | | | |
| 43½ | 45½ | 33½ | 56⅜ | 25 | | | 67,000 | 404,800 | Lambert | No | 748,996 | 8.00 | | |
| 19⅛ | 19⅜ | 14 | 24¼ | 6 | | | 20,500 | 90,100 | Lehn & Fink | No | 419,166 | 2.20 | 2.61 | |
| 16⅞ | 18 | 12⅜ | 22 | 9 | 55½ | 13½ | 32,000 | 103,100 | Liquid Carbonic Corp. | No | 342,000 | 1.00 | 2.96 | 5.22 |
| 4⅞ | 5½ | 2⅜ | 5½ | 1⅛ | 17 | 3⅜ | 27,800 | 120,200 | McKesson & Robbins | No | 1,073,000 | 1.00 | | .96 |
| 12½ | 14 | 6¼ | 23 | 3⅛ | 37⅜ | 16 | 14,400 | 53,380 | conv. 7% cum. pref. | 50 | 428,180 | 3.50 | | |
| 10⅜ | 10⅛ | 9¼ | 15⅛ | 9¼ | 25 | 13 | 400 | 10,500 | MacAndrews & Forbes | No | 340,000 | 1.00 | 1.94 | 2.61 |
| 19 | 19½ | 12½ | 20⅛ | 9 | 31½ | 12 | 68,800 | 130,100 | Mathieson Alkali | No | 650,426 | 1.50 | 1.88 | 2.96 |
| 97⅜ | 97⅞ | 94 | 105 | 89½ | 125⅜ | 106½ | 220 | 1,460 | 7% cum. pfd. | 100 | 24,610 | 7.00 | | |
| 23½ | 25 | 19½ | 30⅜ | 13⅜ | 29 | 16½ | 13,700 | 83,600 | Monsanto Chem. | No | 416,000 | 1.25 | 2.98 | 1.73 |
| 24⅛ | 27½ | 20⅜ | 27½† | 13 | 36⅜ | 16 | 151,400 | 354,900 | National Dist. Prod. cts. (new) | No | 252,000 | 2.00 | — | 1.23 |
| 72¼ | 73 | 68 | 92 | 45 | 132 | 78½ | 1,300 | 20,400 | National Lead | 100 | 310,000 | 5.00 | | 7.58 |
| 110¼ | 110½ | 99¼ | 125 | 87 | 143 | 111 | 1,350 | 12,318 | 7% cum. "A" pfd. | 100 | 244,000 | 7.00 | | |
| 85 | 89⅞ | 80½ | 105 | 61 | 120 | 102 | 250 | 3,540 | 6% cum. "B" pfd. | 100 | 103,000 | 6.00 | | |
| 27½ | 27⅞ | 19½ | 32⅜ | 16 | 46½ | 22 | 13,900 | 83,100 | Penick & Ford | No | 425,000 | 1.00 | | 4.01 |
| 33⅜ | 34 | 26 | 42⅜ | 19⅞ | 71¼ | 36⅜ | 78,395 | 569,795 | Procter & Gamble | No | 6,410,000 | 2.00 | Yr. Je. '30 | 3.36 |
| 28⅜ | 30½ | 24⅛ | 30½† | 15⅛ | 51½ | 23⅛ | 245,300 | 993,700 | Standard Oil, Calif. | No | 12,846,000 | 2.00 | | 2.88 |
| 35⅞ | 36⅞ | 29¼ | 36½† | 19⅛ | 52½ | 26 | 565,560 | 3,448,529 | Standard Oil, N. J. | 25 | 25,419,000 | 1.00 | | 1.65 |
| 11⅛ | 11⅛ | 9⅛ | 11⅛† | 5½ | 26 | 8⅜ | 291,100 | 1,565,100 | Socony-Vacuum | 25 | 17,809,000 | .80 | | .92 |
| 3½ | 3½ | 1⅜ | 3½† | 1 | 9½ | 2 | 16,000 | 40,400 | Tenn. Corporation | No | 857,000 | 1.00 | | 1.21 |
| 23⅞ | 24½ | 17⅛ | 26⅜ | 12 | 55⅜ | 19½ | 160,200 | 602,300 | Texas Gulf Sulphur | No | 2,540,000 | 2.00 | 3.52 | 5.50 |
| 27 | 28 | 18⅜ | 36⅜ | 15½ | 72 | 27⅛ | 670,500 | 2,673,296 | Union Carbide & Carb. | No | 9,001,000 | 1.20 | 2.00 | 3.12 |
| 15⅝ | 16⅜ | 10⅛ | 16⅜† | 6⅜ | 28⅜ | 6½ | 40,300 | 97,800 | United Carbon Co. | No | 398,000 | | — | 1.43 |
| 34⅜ | 34⅜ | 19 | 34⅜† | 13¼ | 77⅜ | 20⅜ | 255,700 | 1,102,100 | U. S. Ind. Alc. Co. | No | 373,846 | | — | z2.96 |
| 18⅜ | 19¼ | 9¼ | 19¼† | 5½ | 76¼ | 11 | 316,200 | 1,334,100 | Vanadium Corp. of Amer. | No | 378,367 | | | 2.95 |
| 2¼ | 2¼ | 1 | 2⅜† | ⅜ | 3½ | ⅛ | 30,800 | 894,500 | Virginia Caro. Chem. | No | 487,000 | | Yr. Je. '30 | Nil |
| 10⅜ | 11½ | 6½ | 11½† | 3⅜ | 17 | 2⅜ | 8,100 | 20,600 | 6% cum. part. pfd. | 100 | 213,000 | | Yr. Je. '30 | 2.63 |
| 61 | 65 | 50½ | 65† | 20 | 72 | 35 | 4,300 | 16,500 | 7% cum. prior pfd. | 100 | 145,000 | | Yr. Je. '30 | 11.96 |
| 8½ | 9 | 5⅞ | 12⅜ | 3 | 40 | 7⅜ | 9,700 | 59,050 | Westvaco Chlorine Prod. | No | | 1.00 | 1.79 | 2.51 |

h 11 mos. ending Aug. 30

w 13 mos.

z Before inventory adjustment

*New Low

†New High

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | **NEW YORK CURB** | | | | | |
| ... | 5½ | 4 | 6⅞ | 4 | 8½ | 5 | 500 | 3,300 | Acetol Prod. conv. "A" | No | 60,000 | |
| ... | 3 | 1 | 3† | 1 | 19½ | 1½ | 1,100 | 10,800 | Agfa Ansco Corp. | No | 300,000 | |
| 62 | 63 | 38½ | 63† | 22 | 224 | 48 | 38,100 | 143,400 | Aluminum Amer. | No | 1,473,000 | z1.93 |
| 56 | 60 | 42½ | 67 | 33½ | 109¾ | 56¾ | 1,100 | 19,460 | 6% cum. pfd. | 100 | 1,473,000 | 3.00 | 2.66 | |
| 4⅜ | 4⅜ | 3½ | 5⅜ | 1⅜ | 12¾ | 2⅜ | 66,700 | 400,720 | Amer. Cyanamid "B" | No | 2,404,000 | .21 | | |
| ½ | ½ | ⅛ | ⅞† | ⅛ | 15 | ¼ | 10,100 | 41,200 | Anglo-Chilean Nitrate | No | 1,757,000 | Yr. Je. '30 | | Nil |
| ... | 2½ | 1¾ | 2½† | ¾ | 4 | ¼ | 1,500 | 2,700 | Assoc. Rayon Corp. | No | 1,200,000 | Yr. Je. '30 | | 1.87 |
| ... | ... | ... | ... | ... | 60 | 32½ | | | conv. 6% cum. pfd. | 100 | 200,000 | 6.00 | | |
| 1⅜ | 1⅜ | 1 | 1⅜ | ¾ | 2⅜ | ⅜ | 400 | 10,500 | Brit. Celanese Am. Rcts | 2.43 | 2,806,000 | | | |
| ... | 24 | 12 | 24† | 8 | 81½ | 16½ | 2,075 | 5,150 | Celanese 7% cum. part. 1st pfd. | 100 | 148,000 | 7.00 | | |
| 33 | 33 | 25 | 42 | 17 | 65 | 25 | 1,700 | 5,925 | " 7% cum. prior pfd. | 100 | 115,000 | 7.00 | | |
| 1½ | 2 | 1½ | 3 | 1½* | ... | ... | 900 | 2,550 | Celluloid Corp. | No | 195,000 | | | |
| ... | ... | ... | 5⅞ | 4½ | 9 | 5½ | | 1,200 | Courtaulds, Ltd. | 1£ | | | | |
| ... | 36 | 30 | 36† | 21½ | 51 | 30½ | 600 | 3,200 | Dow Chemical | No | 630,000 | 2.00 | | 3.44 |
| ... | ⅜ | ⅜ | ⅜ | ⅜ | | | 600 | | Duval Texas Sulphur | No | 500,000 | | | |
| 8½ | 8¼ | 8 | 8½ | 5¾ | 13 | 6½ | 200 | 2,400 | Heyden Chemical Corp. | 10 | 150,000 | 1.00 | | |
| ... | ... | ... | 2¾ | 2½ | 3½ | 2⅜ | | 200 | Imperial Chem. Ind. | 1£ | | | 1.21 | |
| 18 | 18¼ | 14⅞ | 19 | 11½ | | | 3,400 | | Parke, Davis | No | 5,000,000 | 1.00 | | |
| 13 | 13 | 12 | 19 | 9 | | | 200 | | Pratt & Lambert | No | 375,000 | 1.00 | | |
| 12¾ | 12¾ | 11½ | 12⅝ | 6¼ | 60 | 20 | 2,000 | | Shawinigan W. & P. | No | 2,178,000 | 1.00 | | |

| 1932 August Last | 1932 High | 1932 Low | 1931 High | 1931 Low | Sales In August | Sales During 1932 | ISSUES | Par $ | Shares Listed | An. Rate | Earnings $-per share-$ 1931 | Earnings $-per share-$ 1930 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 27 | 27 | 24 | 34½ | 20 | 66½ | 34½ | 1,100 | 4,600 | Sherwin-Williams Co. | 25 | 636,000 | 2.00 | Yr. Aug. '30 | 4.14 |
| 1 | 1⅞ | 1 | 1⅛† | ⅛ | 12 | ⅜ | 10,000 | 30,700 | Silica Gel Corp. | No | 600,000 | | | |
| 24½ | 25 | 20⅞ | 25† | 13¼ | 38½ | 13½ | 129,000 | 672,680 | Standard Oil Ind. | 25 | 16,851,000 | 1.00 | | 2.73 |
| 13 | 13⅜ | 11⅜ | 22 | 7 | 30⅜ | 14⅜ | 26,300 | 217,650 | Swift & Co. | 25 | 6,000,000 | 1.00 | | 2.08 |
| ... | ... | ... | ... | ... | 16 | 1½ | | 42,000 | Tubize "B" | No | 600,000 | 10.00 | | |
| ... | ... | ... | ... | ... | | | | 2,600 | United Chemicals | | | | | |
| | | | | | ... | ... | | | $3 cum. part. pfd. | No | 115,000 | 3.00 | | |
| | | | | | | | CLEVELAND | | | | | | | |
| ... | ... | ... | ... | ... | ... | ... | | 50 | Cleve-Cliffs Iron $5 pfd. | No | 498,000 | 5.00 | | — 11.42 |
| 5 | 5 | 4 | 9¼ | 4 | | | 99 | | Cliffs Corp. cts dep. | No | 810,000 | 1.00 | | |
| 36½ | 36½ | 27 | 36½† | 21½ | 51½ | 30 | 679 | 7,518 | Dow Chemical Co. | No | 630,000 | 2.00 | | 3.44 |
| 91 | 91 | 91 | 100 | 88 | | | 50 | | Dow Chemical Co., pfd. | 100 | 3,000,000 | 7.00 | | |
| 110 | 111 | 107 | 120 | 100 | | | 109 | | National Carbon, pfd. | 100 | 5,600,000 | 7.00 | | |
| 26 | 29 | 22 | 35 | 19⅜ | 68½ | 33⅞ | 2,225 | 15,879 | Sherwin-Williams Co. | 25 | 636,000 | 2.00 | Yr. Aug. '30 | 4.14 |
| | | | | | | | CHICAGO | | | | | | | |
| 27½ | 27½ | 23½ | 31¾ | 18¼ | 39⅞ | 26½ | 101 | 5,601 | Abbott Labs. | No | 145,000 | 2.50 | | 3.32 |
| 3 | 3 | 2½ | 4½ | 1 | 5½ | 3 | 390 | 1,810 | Monroe Chem. | No | 126,000 | | 1.21 | 1.09 |
| 25 | 25 | 25 | 32½ | 18½ | 33 | 24 | 120 | 1,710 | $3.50 cum. pref. | No | 30,000 | 3.50 | | |
| 12⅞ | 13⅛ | 11⅛ | 19 | 7 | 30½ | 16½ | 58,450 | 393,850 | Swift & Co. | 25 | 6,000,000 | 1.00 | | 2.08 |
| | | | | | | | CINCINNATI | | | | | | | |
| ... | 33 | 26½ | 42¾ | 20 | 71 | 36⅞ | 3,865 | 221,575 | Procter & Gamble | No | 6,410,000 | 2.40 | Yr. Je. '30 | 3.36 |
| | | | | | | | PHILADELPHIA | | | | | | | |
| ... | 36½ | 29⅞ | 36½† | 19⅞ | 75 | 37¼ | 450 | 1,012 | Pennsylvania Salt | 50 | 150,000 | 3.00 | Yr. Je. '30 | 7.97 |
| | | | | | | | PITTSBURGH | | | | | | | |
| 69 | 69 | 42¾ | 69† | 30 | | | 1,110 | | Koppers Gas & Coke, pfd. | 100 | 50,000,000 | 6.00 | | |
| 18¼ | 18¼ | 15½ | 20 | 12¼ | | | 3,645 | | Pittsburgh Plate Glass | 25 | 65,000,000 | 2.00 | | |
| | | | | | | | SAN FRANCISCO | | | | | | | |
| 20 | 20 | 15 | 20† | 11⅝ | | | 1,220 | | Clorox Chemical "A" | No | 100,000 | | | |
| 13¼ | 13⅜ | 12 | 25½ | 5 | | | 2,848 | | Paraffine Co. | No | 700,000 | 2.00 | | |
| | | | | | | | TORONTO | | | | | | | |
| 2⅜ | 2½ | 1⅞ | 2½† | ⅜ | | | 1,795 | | Can. Industrial Alcohol "A" | No | 1,000,000 | | | |

# *The Industry's Bonds*

| 1932 August Last | 1932 High | 1932 Low | 1931 High | 1931 Low | Sales In August | Sales During 1932 | ISSUE | Date Due | Int. % | Int. Period | Out-standing $ |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | NEW YORK STOCK EXCHANGE | | | | |
| 76½ | 78½ | 70 | 80 | 62 | 90 | 69½ | 51 | 238 | Amer. Cyan. deb. 5s | 1942 | 5 | A. O. | 4,554,000 |
| 79 | 80 | 69½ | 80† | 54½ | 102 | 52 | 199 | 2,237 | Amer. I. G. Chem. conv. 5½s | 1949 | 5½ | M. N. | 29,933,000 |
| 90 | 91½ | 75 | 96 | 72 | 104½ | 85¾ | 125 | 2,149 | Am. Smelt & Ref. 1st. 5s. "A" | 1947 | 5 | A. O. | 36,578,000 |
| ... | 18 | 9½ | 18 | 1 | 63½ | 7½ | 75 | 399 | Anglo-Chilean s. f. deb. 7s | 1945 | 7 | M. N. | 14,600,000 |
| 100 | 100½ | 97 | 100½† | 85½ | 103 | 89 | 293 | 799 | Atlantic Refin. deb. 5s | 1937 | 5 | J. J. | 14,000,000 |
| 56 | 56 | 39⅞ | 60 | 34½ | 104 | 59 | 80 | 204 | By-Products Coke Corp. 1st 5½s "A" | 1945 | 5½ | M. N. | 6,629,000 |
| 104 | 104 | 103 | 104† | 100⅝ | 105⅜ | 100 | 104 | 158 | Corn Prod. Refin. 1st s. f. 5s | 1934 | 5 | M. N. | 1,822,000 |
| 52 | 52 | 40 | 52† | 32 | | | 13 | | Int. Agric. Corp. 1st coll. tr. stamped to 1942 | 1942 | 5½ | | |
| 11½ | 15¼ | 5 | 15¼† | ⅛ | 75½ | 6 | 564 | 2,580 | Lautaro Nitrate conv. 6s | 1954 | 6 | J. J. | 32,000,000 |
| 49 | 55 | 33 | 60 | 25⅛ | | | 963 | | McKesson & Robbins deb. 5½s | 1950 | 5½ | M. N. | 21,686,000 |
| ... | 83½ | 82¼ | 87 | 67 | | | 7 | | Montecatini Min. & Agric. deb 7s with warrants | 1937 | 7 | J. J. | 8,188,000 |
| 85½ | 87 | 72 | 87† | 60½ | 96 | 67¾ | 174 | 893 | Pure Oil s. f. 5½% notes | 1937 | 5½ | F. A. | 17,500,000 |
| 35½ | 36½ | 31 | 36½ | 17 | | | 35 | | Ruhr chemical s. f. 6s | 1948 | 6 | A. O. | 3,578,000 |
| 86 | 89½ | 80 | 89½† | 66 | 103 | 80 | 24 | 697 | Solvay Am. Invest. 5% notes | 1942 | 5 | M. S. | 15,000,000 |
| 102⅞ | 102⅞ | 102 | 102⅞ | 98¾ | 105½ | 98¼ | 1,060 | 7,294 | Standard Oil, N. J. deb. 5s | 1946 | 5 | F. A. | 120,000,000 |
| 95 | 96 | 89 | 96† | 82 | 106½ | 85 | 555 | 2,338 | Standard Oil, N. Y. deb. 4½s | 1951 | 4½ | J. D. | 50,000,000 |
| 61¾ | 62 | 47 | 63 | 39 | 99 | 45 | 65 | 476 | Tenn. Corporation deb. 6s. "B" | 1944 | 6 | M. S. | 3,308,000 |
| 59 | 61 | 40⅛ | 75 | 30 | | | 744 | | Vanadium Corp. conv. 5s | 1941 | 5 | A. O. | 5,000,000 |
| | | | | | | | NEW YORK CURB | | | | |
| 98 | 99¾ | 91 | 99¼† | 81 | 105½ | 93½ | 367,000 | 2,144,000 | Aluminum Co., s. f. deb. 5s | 1952 | 5 | M. S. | 37,115,000 |
| 69 | 69 | 58½ | 74 | 45 | 104¼ | 66 | 148,000 | 695,000 | Aluminum Ltd., 5s | 1948 | 5 | J. J. | 20,000,000 |
| ... | ... | ... | ... | ... | 56 | 10 | | 65,000 | Amer. Solv. & Chem. 6½s | 1936 | 6½ | M. S. | 1,737,000 |
| 38⅞ | 39 | 28 | 40½ | 19 | | | 101,000 | | Associated Rayon 5s | 1950 | 5 | J. D. | 10,000,000 |
| ... | ... | ... | 25 | 21 | 43 | 29 | | 106,000 | General Rayon 6s. "A" | 1948 | 6 | J. D. | 5,085,000 |
| ... | ... | ... | 20 | 10 | | | | | General Ind. Alcohol 6½s | 1944 | 6½ | M. N. | 2,219,000 |
| 87½ | 87½ | 72 | 87½† | 62 | | | 115,000 | | Glidden Co. 5½s | 1935 | 5½ | J. D. | 6,000,000 |
| 100½ | 100½ | 96 | 100½† | 90 | 103½ | 40½ | 226,000 | 1,562,000 | Gulf Oil, 5s | 1937 | 5 | J. D. | 30,414,000 |
| 97½ | 98½ | 93½ | 98½† | 83 | 104 | 74 | 264,000 | 1,462,000 | Sinking Fund deb. 5s | 1947 | 5 | F. A. | 35,000,000 |
| 85 | 85 | 66⅝ | 88 | 46 | 102⅞ | 66 | 316,000 | 1,667,000 | Koppers G. & C. deb. 5s | 1947 | 5 | J. D. | 23,050,000 |
| 100½ | 100½ | 98 | 104½ | 96½ | | | 128,000 | | Proctor & Gamble 4½s | 1947 | 4½ | J. J. | 10,700,000 |
| 70 | 74 | 55 | 76 | 55* | 98¾ | 56 | 613,000 | 2,426,000 | Shawinigan W. & P. 4½s. "A" | 1967 | 4½ | A. O. | 35,000,000 |
| 74 | 74½ | 55 | 76 | 55* | 98½ | 58 | 135,000 | 855,000 | 4½s., series "B" | 1968 | 4½ | M. N. | 16,108,000 |
| 44 | 49⅞ | 28½ | 50† | 24 | | | 28,000 | | Silica Gel Corp. 6½s | 1932 | 6½ | A. O. | 1,700,000 |
| 101½ | 103 | 100 | 103† | 92½ | 104 | 99⅞ | 103,000 | 1,015,000 | Swift & Co., 5s | 1944 | 5 | J. J. | 22,916,000 |
| 102 | 103 | 102 | 103† | 99 | 104½ | 95 | 27,000 | 635,000 | Westvaco Chlorine Prod. 5½s | 1937 | 5½ | M. S. | 1,992,000 |

*New Low
†New High

# *Chemical Exports and Imports*

## U. S. Chemical Export Figures for June

| ARTICLES, AND COUNTRIES TO WHICH EXPORTED | UNIT OF QUANTITY | JUNE— | | | | SIX MONTHS ENDING JUNE— | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1931 | | 1932 | | 1931 | | 1932 | |
| GROUP 8.—CHEMICALS AND RELATED PRODUCTS | | *Quantity* | *Value* $7,735,261 | *Quantity* | *Value* $5,344,729 | *Quantity* | *Value* $54,392,242 | *Quantity* | *Value* $36,633,985 |
| *A* COAL-TAR PRODUCTS | | | 840,270 | | 448,243 | | 5,349,563 | | 4,201,775 |
| Benzol | Gal | 3,093,601 | 524,537 | 2,428 | 770 | 10,511,570 | 1,911,729 | 1,578,567 | 322,028 |
| Crude coal tar | Bbl [1] | 4,364 | 13,768 | 58,038 | 136,187 | 25,609 | 81,929 | 182,047 | 429,677 |
| Coal-tar pitch | Ton | 233 | 5,418 | 1,399 | 17,177 | 9,980 | 107,190 | 78,500 | 762,095 |
| Creosote oil | Gal | 225,367 | 33,591 | 51,296 | 7,990 | 1,006,028 | 142,812 | 78,097 | 13,517 |
| Coal-tar colors, stains, and color lakes | Lbs | 559,913 | 192,488 | 989,385 | 209,529 | 11,817,544 | 2,676,963 | 8,102,990 | 2,082,360 |
| Other coal-tar products, exclusive of medicinals | Lb | 699,288 | 70,468 | 825,245 | 76,590 | 4,243,713 | 428,940 | 11,368,598 | 592,098 |
| *C.* INDUSTRIAL CHEMICAL SPECIALTIES | | | 1,138,037 | | 917,803 | | 7,541,788 | | 5,278,872 |
| Nicotine sulphate (40% basis) | Lb | 13,653 | 15,400 | 21,572 | 19,061 | 218,626 | 176,630 | 122,435 | 87,218 |
| Lead arsenate | Lb | 91,578 | 8,725 | 133,892 | 10,710 | 1,039,236 | 108,119 | 740,920 | 61,443 |
| Calcium arsenate | Lb | 174,670 | 9,147 | 135,241 | 5,554 | 1,042,978 | 55,046 | 1,293,676 | 53,937 |
| Other agricultural insecticides, fungicides and similar preparations and materials | Lb | 758,148 | 81,813 | 374,403 | 31,978 | 4,617,110 | 473,488 | 3,997,897 | 346,215 |
| Household insecticides and exterminators | Lb | 611,020 | 185,283 | | | 5,004,172 | 1,531,534 | | |
| Liquid | Lb | | | 200,710 | 51,650 | | | 1,341,604 | 382,747 |
| Powdered or paste | Lb | | | 35,671 | 12,445 | | | 297,501 | 103,714 |
| Household disinfectants, deodorants, germicides and similar preparations | Lb | 282,498 | 23,146 | 86,069 | 11,972 | 1,480,551 | 180,332 | 769,551 | 77,285 |
| Baking powder | Lb | 320,711 | 112,629 | 192,310 | 37,310 | 2,071,006 | 628,030 | 1,302,146 | 305,514 |
| *D.* INDUSTRIAL CHEMICALS | | | 1,549,351 | | 1,213,788 | | 10,543,013 | | 8,049,806 |
| Acids and anhydrides— | | | | | | | | | |
| Organic (exclusive of coal-tar acids) | Lb | 50,963 | 8,172 | 20,444 | 4,670 | 257,756 | 49,914 | 204,388 | 35,250 |
| Inorganic— | | | | | | | | | |
| Nitric | Lb | 12,752 | 1,352 | 6,283 | 815 | 544,445 | 36,536 | 111,940 | 13,087 |
| Sulphuric | Lb | 250,775 | 4,301 | 193,983 | 3,423 | 1,844,770 | 34,100 | 1,633,538 | 25,983 |
| Hydrochloric (muriatic) | Lb | 78,627 | 2,602 | 325,110 | 5,192 | 2,815,495 | 47,121 | 5,113,095 | 73,781 |
| Boric (boracic) | Lb | 32,682 | 2,185 | 67,234 | 2,741 | 1,563,428 | 78,883 | 1,976,031 | 83,896 |
| Other inorganic acids and anhydrides | Lb | 90,897 | 17,253 | 878,575 | 31,974 | 1,341,294 | 121,026 | 3,674,808 | 135,833 |
| Alcohols— | | | | | | | | | |
| Methanol | Gal | 59,950 | $24,292 | 55,129 | $22,141 | 260,435 | $113,384 | 301,510 | $127,923 |
| Glycerol (glycerin) | Lb | 14,869 | 2,165 | 20,126 | 2,182 | 163,420 | 21,717 | 128,426 | 14,450 |
| Butanol (butyl alcohol) | Lb | 86,050 | 10,539 | 128,249 | 11,356 | 620,488 | 78,636 | 684,526 | 65,852 |
| Other alcohols | Lb | 59,458 | 8,363 | 111,304 | 13,753 | 951,305 | 76,412 | 628,886 | 69,586 |
| Acetone | Lb | 202,215 | 16,160 | 126,518 | 10,549 | 1,826,941 | 139,766 | 2,442,992 | 176,183 |
| Carbon tetrachloride | Lb | 4,526 | 354 | 16,612 | 1,037 | 179,297 | 10,589 | 422,550 | 20,949 |
| Carbon bisulphide | Lb | 97,030 | 5,705 | 327,850 | 14,178 | 776,486 | 51,607 | 1,582,806 | 81,089 |
| Formaldehyde (formalin) | Lb | 205,790 | 15,164 | 63,581 | 3,686 | 1,594,360 | 94,414 | 1,340,833 | 65,266 |
| Ethylene compounds | Lb | 50,714 | 7,910 | 23,142 | 2,560 | 286,812 | 50,764 | 163,365 | 24,180 |
| Citrate of lime | Lb | 529,456 | 66,052 | 763,257 | 51,988 | 2,501,601 | 318,734 | 3,513,223 | 287,363 |
| Other synthetic organic products | Lb | 251,494 | 44,656 | 375,248 | 62,940 | 1,126,026 | 212,573 | 1,628,384 | 271,560 |
| Nitro or aceto cellulose solutions, collodion, etc | Lb | 193,366 | 52,469 | 177,245 | 30,610 | 1,243,064 | 302,998 | 923,696 | 168,545 |
| Ammonium compounds (except sulphate, phosphate, and anhydrous ammonia) | Lb | 122,311 | 38,714 | 191,321 | 9,465 | 746,279 | 77,410 | 596,994 | 28,602 |
| Aluminum sulphate | Lb | 3,615,632 | 39,232 | 3,334,788 | 35,468 | 23,421,904 | 261,418 | 20,851,181 | 222,775 |
| Other aluminum compounds | Lb | 96,033 | 10,051 | 12,182 | 891 | 1,036,828 | 103,706 | 544,293 | 49,519 |
| Calcium compounds— | | | | | | | | | |
| Carbide | Lb | 158,769 | 6,850 | 390,176 | 13,491 | 1,508,370 | 65,439 | 1,559,010 | 61,583 |
| Chlorinated lime (bleaching powder) | Lb | 89,416 | 5,457 | 234,142 | 4,621 | 654,985 | 28,851 | 1,286,885 | 33,166 |
| Chloride | Lb | 7,499,110 | 89,290 | 8,238,447 | 85,283 | 34,885,381 | 404,800 | 28,533,273 | 300,223 |
| Other, except arsenate, cyanide, and citrate | Lb | 133,070 | 7,389 | 232,705 | 7,722 | 863,439 | 42,999 | 768,894 | 37,656 |
| Copper sulphate (blue vitriol) | Lb | 494,689 | 18,778 | 299,098 | 8,428 | 4,261,544 | 174,707 | 2,247,456 | 66,219 |
| Hydrogen peroxide (or dioxide) | Lb | 89,794 | 11,722 | 77,448 | 11,970 | 742,857 | 125,516 | 312,909 | 44,141 |
| Potassium compounds (not fertilizers) | Lb | 221,740 | 30,011 | 112,158 | 14,316 | 1,142,154 | 180,505 | 937,752 | 135,351 |
| Sodium compounds | Lb | 37,135,615 | 733,149 | 32,670,740 | 567,668 | 256,160,039 | 5,193,744 | 215,851,218 | 4,103,350 |
| Bichromate and chromate | Lb | 473,304 | 30,751 | 569,264 | 29,187 | 2,105,407 | 139,189 | 3,300,974 | 176,396 |
| Cyanide | Lb | 13,816 | 1,438 | 112,867 | 15,554 | 453,123 | 67,788 | 452,360 | 58,948 |
| Borate (borax) | Lb | 10,233,156 | 192,021 | 13,915,096 | 187,450 | 76,212,656 | 1,586,498 | 99,728,808 | 1,599,996 |
| Silicate (water glass) | Lb | 4,801,819 | 46,124 | 3,661,138 | 28,608 | 29,160,012 | 261,565 | 26,775,923 | 222,740 |
| Soda ash | Lb | 3,951,015 | 63,941 | 3,020,705 | 48,219 | 32,378,232 | 501,757 | 13,624,141 | 235,338 |
| Sal soda | Lb | 627,347 | 8,476 | 384,629 | 5,534 | 4,674,242 | 62,085 | 3,022,023 | 44,897 |
| Bicarbonate (acid soda or baking soda) | Lb | 1,587,344 | 26,995 | 989,952 | 17,283 | 9,249,225 | 167,302 | 7,225,071 | 132,680 |
| Sulphate | Lb | 1,101,056 | 6,336 | 43,654 | 832 | 4,930,321 | 41,287 | 1,107,483 | 11,108 |
| Bisulphate (niter cake) | Lb | 2,021,133 | 12,766 | 116,110 | 1,448 | 17,318,449 | 102,102 | 601,217 | 6,074 |
| Hydroxide (caustic soda) | Lb | 10,025,061 | 265,783 | 9,119,587 | 200,274 | 71,131,979 | 1,917,609 | 54,146,516 | 1,347,899 |
| Sulphide | Lb | 13,707 | 568 | 23,581 | 1,474 | 425,471 | 15,834 | 201,220 | 7,908 |
| Fluorides | Lb | 10,082 | 787 | 10,372 | 986 | 111,388 | 10,712 | 57,016 | 4,919 |
| Sodium phosphate (mono, di., or tri) | Lb | 527,245 | 15,135 | 527,246 | 14,421 | 3,059,649 | 95,407 | 3,135,558 | 95,945 |
| Other sodium compounds | Lb | 1,749,530 | 62,028 | 176,539 | 16,398 | 4,949,885 | 224,609 | 2,472,908 | 158,502 |
| Tin compounds | Lb | 15,652 | 4,062 | 50,446 | 7,335 | 370,599 | 71,626 | 362,616 | 56,017 |
| Zinc compounds | Lb | 14,949 | 2,251 | 24,963 | 2,173 | 1,105,404 | 48,011 | 324,336 | 24,023 |
| Gases, compressed, liquified and solidified— | | | | | | | | | |
| Ammonia, anhydrous | Lb | 119,942 | 20,198 | 82,352 | 9,578 | 1,308,500 | 151,954 | 689,585 | 92,670 |
| Chlorine | Lb | 807,598 | 18,908 | 266,955 | 7,914 | 4,717,426 | 137,448 | 3,496,605 | 93,788 |
| Other gases, n. e. s. | Lb | 146,237 | 22,701 | 114,080 | 29,176 | 1,155,967 | 155,301 | 1,067,148 | 153,268 |
| Other industrial chemicals | | | 200,894 | | 122,494 | | 1,480,404 | | 806,679 |
| *E.* PIGMENTS, PAINTS, AND VARNISHES | | | 1,318,634 | | 868,548 | | 8,378,175 | | 5,516,184 |
| Mineral earth pigments— | | | | | | | | | |
| Ocher, umber, sienna, and other forms of iron oxide for paints | Lb | 816,099 | 17,330 | 333,116 | 9,342 | 5,448,427 | 144,844 | 3,475,945 | 111,810 |
| Other mineral-earth pigments (whiting, barytes, etc.) | Lb | 3,074,97 | 17,347 | 486,711 | 5,997 | 9,232,743 | 94,970 | 4,064,922 | 49,381 |

ADVERTISEMENTS — *Each article on this page is a paid advertisement.*

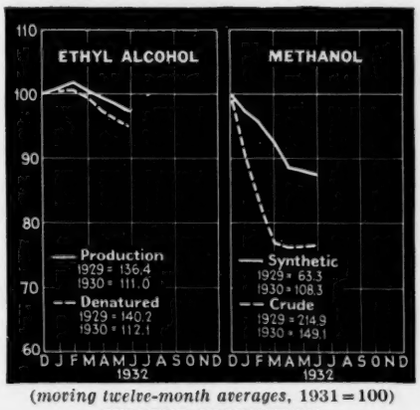
# SOLVENT NEWS

SEPTEMBER ★ A Monthly Series of Articles for Chemists and Executives of the Solvent-Consuming Industries ★ 1932

## DEMAND FOR SOLVENTS INCREASED LAST MONTH

Trade reports are authority for the statement that sales of rayon in August were the largest for any month in the history of the domestic industry. Reports of enlarged manufacturing operations of rayon plants were almost 100 per cent inclusive, and other branches of the textile industry materially increased plant activities.

As a result, demand for solvents in that direction was reflected in a larger tonnage movement. Other consumers of solvents likewise were more active and deliveries of practically all solvents and diluents were reported to have made gains over the totals moved in the preceding month.




(*moving twelve-month averages*, 1931 = 100)

**CURRENT PRODUCTION**

| | | | 1932 | 1931 |
|---|---|---|---|---|
| **ETHYL ALCOHOL** | | | | |
| **Total Produced** | Jan.-July | | 77,213 | 82,025 |
| 1000 proof | June | | 10,500 | 13,111 |
| gallons | July | | 11,908 | 11,975 |
| **Total Denatured** | Jan.-June | | 28,002 | 32,083 |
| 1000 wine | May | | 4,868 | 5,954 |
| gallons | June | | 5,300 | 6,195 |
| **METHANOL,** 1000 gal. | | | | |
| **Crude** | Jan.-June | | 1,439 | 2,224 |
| | May | | 254 | 248 |
| | June | | 162 | 182 |
| **Synthetic** | Jan.-June | | 3,604 | 4,378 |
| | May | | 743 | 785 |
| | June | | 713 | 654 |

While producers of some solvents have preferred to run their plants at near-capacity with temporary shutdown rather than at continuous low-scale operations, in the majority of cases, outputs have been adjusted to changed consuming requirements. Hence, the statistical situation appears favorable for continued price stability and to quick adjustment to meet enlarged consuming demands.

### EXPLOSIVES MAINTAIN DECLINE

Census figures report production of explosives in 1931 at 347,055,998 pounds valued at $39,612,685, a decrease of 34.5 per cent in quantity and of 37.1 per cent in value compared with totals for 1929. The *Solvent News* index shows explosives more than 20% off 1931, through the first seven months of this year, with an unusually accelerated decline.

### ANSOL THINS BAKELITE VARNISHES

**Bakelite Varnishes** can be safely thinned to desired consistencies without fear of adding sufficient water to cause cloudy films. Ansol M, anhydrous, has proved to be an ideal solvent for this purpose. While ordinary C. D. No. 5 is customarily used, its inherent 5% water content has caused drying difficulties. Ansol M is an active and fast evaporating alcohol solvent, very economical to use, being cheaper than anhydrous alcohol.

### UPTURN IN DRUG TRADE

August conditions in the retail drug trade, important outlet for chemical products, have been markedly more healthy—disastrous price-cutting has been curtailed, sales are ahead on a firmer price basis, and bad debts are less than ½ of 1%—. *Dun's Review* also reports fairly active summer trade, although sales are 20% off 1931, for the first six months.

## NEED FOR UNIFORM LACQUER TERMINOLOGY EXPRESSED

As the number of types and uses of the many finishes which dry by solvent evaporation increase, the need for a more definite, easily understood system of terminology has become evident. Increasing numbers of consumers have been accidentally or purposely mislead by the trade names of finishes they have purchased.

The growth of lacquer consumption has been an invaluable stimulant to the American Chemical Industry. It would be unfortunate to lose the gains already achieved by allowing consumers to form incorrect or damaging conclusions from the use of misnamed finishes.

It has been reported that many so-called "synthetic" finishing materials have been recently offered which have contained only small percentages of true synthetic resins. The buyer has believed that he has been purchasing and using an all-synthetic product, whereas in reality his finish has been a commercial nitrocellulose lacquer. Failure of the "synthetic" to perform up to the technical standards of a genuine synthetic resin finish has alienated some consumers from this type of material.

To protect the growing market for these finishes, general adoption and enforcement of a standard nomenclature seem necessary. The industry and users would welcome such a step by producers.

* * *

**Diethyl Oxalate** produced by the U. S. Industrial Chemical Co., Inc. is an ester of high quality and is anhydrous and non-corrosive.

## SAFETY COUNCIL WILL DISCUSS TOXICITY OF CHEMICALS

Solvents as well as many other chemicals will be under scrutiny, with respect to properties which contribute to health and fire hazards, at the twenty-first annual meeting of the National Safety Council which will open in Washington on October 3. Advance notices state that special attention will be given to problems of industrial health.

The forthcoming meeting takes on added importance to the solvent industry because a recent report from the U. S. Department of Labor reveals that an investigation has been made into new health and possible fire hazards arising from the wide use of nitrocellulose and pyroxylin lacquers.

* * *

**Purification of Ethyl Alcohol** for laboratory preparation of alcoholic potassium hydroxide solution was described in a paper presented at the Denver Meeting of the American Chemical Society. Reduction of the aldehydes in commercial alcohol by nascent hydrogen is accomplished by addition of metallic aluminum and solid KOH to alcohol, and subsequent distillation.

## NEW CANADIAN TRADEMARK ACT AFFECTS CHEMICALS

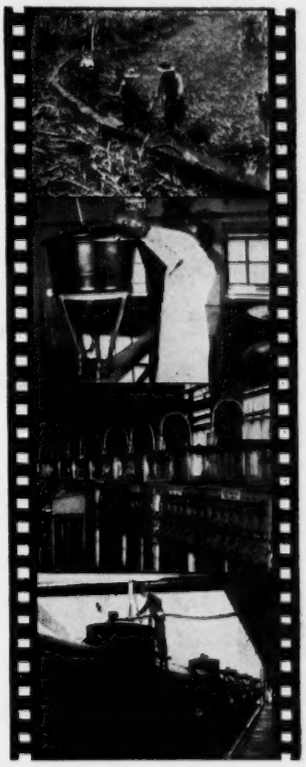
American manufacturers of trade-marked chemical products being sold in Canada are affected by the new statute which requires registration of *all* trade-marks, regardless of previous use. Without such registration, even long-established trademarks are liable to capture, if registered by others.

Owners of unregistered trademarks are allowed six months from September 1st, 1932, the date the act becomes effective, to apply for exclusive right to use. Those who have applications executed before September 1st and filed before October 1st will be covered by the old law which protects registrations for twenty-five years, whereas the new term will be fifteen years.

## INDUSTRIAL ALCOHOL FILM SHOWN NEW YORK AUDIENCES

Preliminary showings of a new two-reel film, "The Manufacture of Industrial Ethyl Alcohol," were held at the New York Museum of Science and Industry. Approximately 1000 people witnessed the movie during the first week of August.

This highly interesting film shows the production of ethyl alcohol from the cutting of sugar cane to final shipment to industrial consumers. Manufacturing scenes were shot at the Baltimore Plant of the U. S. Industrial Alcohol Co. Typical frames are shown below:



Cutting sugar cane, the source of industrial alcohol

Inoculating molasses with pure yeast culture

Pure alcohol from stills analyzed at tail-boxes

Speedy filling of tank car orders

This action picture of alcohol production is supplemented by the flow-sheet illustrated in August *Solvent News*. Free copies of this chart may be obtained from the U. S. Industrial Alcohol Co. The film may be leased to interested parties from De Frenes, Wilkes-Barre, Pa.

SEPTEMBER ★ SOLVENT NEWS ★ 1932

## U. S. I. C. ENCOURAGES LACQUER MANUFACTURER-USER COORDINATION

The tremendous increase in the consumption of nitrocellulose lacquers during the last decade has been made possible by the sound, farsighted relationship existing between lacquer and solvent manufacturers, and consumers.

The progressive solvent producer has realized that the lacquer manufacturer is entitled to his support, both in research, and in distribution.

***Role of Solvent Producer***

Recognizing the service the lacquer manufacturer is performing in widening the ultimate market for solvents, the solvent producer has refrained from inducing lacquer consumers to manufacture lacquers for their own requirements. He has expanded his own technical facilities to give the lacquer manufacturer every possible assistance in meeting the exacting and varied specifications of the automobile, furniture, electrical, and other consuming industries.

That such non-interference is essential to the continued healthy growth of lacquer market is confirmed by common sense and business ethics. Coöperation in research and distribution will continue to enable lacquer and solvent manufacturers to anticipate changing requirements for industrial finishes.

The lacquer consumer will find it to his benefit to employ the long experience of the lacquer manufacturer. He will thus be protected in his lacquer requirements by the combined resources of the lacquer producer —backed by the technical research of the solvent producer.

### WOOD DISTILLATION DOWN

1931 Census figures reveal how badly this industry has been affected by the combination of industrial inactivity and synthetic competition. General declines in tonnage of 50% or more were registered. The *Solvent News* Methanol index shows the continuing decline of the wood product from 1931 to date.

### SOLVENT PRICE TREND

Prices for solvents in the last four months have been well stabilized, based on the current rate of consuming demand. While no quotable changes were made in the last month, greater stability to values has been found in reports of enlarged buying interest.

Higher prices for many commodities have given the impression that a general rising price trend may follow and this, combined with increased consuming demand, has created a firmer price tone throughout the solvent industry.

* * *

**Benzene and Technical Naphtha for Solvent Purposes** are not subject to the excise tax, the Bureau of Internal Revenue has ruled.

## ETHYL ACETATE EARNS WIDER RANGE OF INDUSTRIAL APPLICATION

Keen rivalry has always existed among the leading chemical products for the claim to widest industrial application, although sulfuric acid and ethyl alcohol are still believed most widely used. With the increase in the usefulness of organic solvents and synthetics, however, other basic chemicals have been added to the list of many-purpose materials. A widely known synthetic resin is described as "The Material of a Thousand Uses."

Among the organic solvents, the versatility and usefulness of Ethyl Acetate are difficult to challenge. It is a low boiler of high solvent-power for oils, gums, resins, and nitrocellulose. Some of the diverse products in whose manufacture Ethyl Acetate is employed are:

| | |
|---|---|
| lacquers | dye intermediates |
| nitrocellulose solutions | artificial leather |
| leather dopes | airplane dopes |
| nail enamels | linoleum |
| coated transparent paper | ribbons |
| decalcomanias | coated wall paper |
| essential oils | celluloid |
| plastic wood | candy |
| alcohol (denaturant) | nitrocellulose cements |
| oilcloth | embalming fluids |
| paint removers | cleaning fluid |
| chemicals | spirit varnishes |
| | pharmaceuticals |

Ethyl Acetate is produced by the esterfication of ethyl alcohol with acetic acid. Exceptional purity and uniformity are secured by the perfection of a continuous distillation process, patented by the U. S. Industrial Chemical Co., Inc. To serve the widening demand for anhydrous formulations, an alcohol - and - water - free grade is also available as "Acetic Ether."

### RAYON 29% AHEAD OF 1929

The recent Census report on domestic rayon production in 1931 shows a total of 150,500,000 lbs., a 29% increase over 1929.

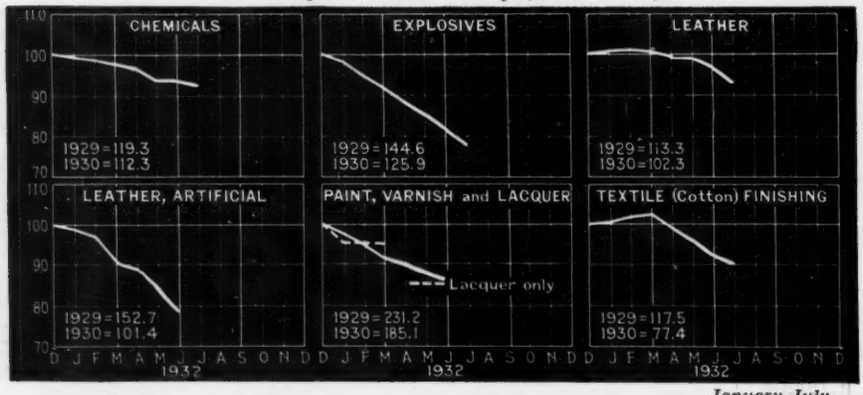
## CONSUMING TREND TOWARD HIGHER-STRENGTH ALCOHOLS

Following the recent official instruction that products employing specially denatured alcohol are to be made from 190° proof alcohol, except in special cases, greater impetus has been given to the tendency to establish that grade as a standard for price quotations rather than 188°.

Changes in consuming trends for methanol likewise have made pure methanol and the denaturing grade of prime commercial importance, with a corresponding decline in the importance of the 95 per cent and 97 per cent grades.

### PRODUCTION TRENDS in major SOLVENT-CONSUMING INDUSTRIES

*(moving twelve-month averages, 1931 = 100)*




| *Production in Industry* | *July* | *June* | *January-July 1932* | *January-July 1931* |
|---|---|---|---|---|
| CHEMICALS: index of production (1931 = 100) | 88.3 | 94.4 | 89.8 | 100.4 |
| EXPLOSIVES: 1000 lb | 12,728 | 14,195 | 114,635 | 183,877 |
| LEATHER: index of production (1931 = 100) | 82.9 | 89.2 | 93.6 | 103.5 |
| LEATHER, ARTIFICIAL: pyroxylin spread, 1000 lb | ——— | 1,944 | 13,194* | 22,024* |
| PAINT, VARNISH, and LACQUER: sales ($1000) | ——— | $19,796 | $118,620* | $161,845* |
| LACQUERS, only 1000 gal | (quarterly reports) | | 4,753** | 5,681** |
| TEXTILE (Cotton) FINISHING: 1000 yd | 37,404 | 40,993 | 432,931 | 500,426 |

*—Through June. **—January-March.


# U. S. INDUSTRIAL ALCOHOL CO.
# U. S. INDUSTRIAL CHEMICAL CO., INC.

**WORLD'S LARGEST PRODUCERS OF ALCOHOL DERIVED SOLVENTS**

**ALCOHOLS**
Amyl Alcohol
Ansol
Butyl Alcohol
Ethyl Alcohol
Anhydrous—Pure and Denatured
Commercial—Pure and Denatured
Fusel Oil—Crude and Refined
Methanol
Secondary Amyl Alcohol
Secondary Butyl Alcohol
Solox

**ESTER SOLVENTS**
Acetic Ether
Amyl Acetate
Butyl Acetate
Ethylene Glycol Monoethylether Acetate
Diatol
Diethyl Carbonate
Estersol
Ethyl Acetate
Ethyl Lactate
Secondary Amyl Acetate
Secondary Butyl Acetate

**ETHER**
Ether, Ethyl—USP. and Absolute

**PLASTICIZERS**
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate
Dimethyl Phthalate

**NITROCELLULOSE SOLUTIONS**
Collodions
Cotton Solutions

**CELLULOSE ACETATE**
Bulk and Solutions

**ORGANIC CHEMICALS**
Ethyl Acetoacetate
Ethyl Chlorocarbonate
Ethyl Oxalate
Ethylene
Sodium Oxalacetate

**MISCELLANEOUS SOLVENTS**
Acetone
Methyl Acetone

*Executive Offices: 60 East 42nd Street, New York, N. Y. Branches in all Principal Cities*

# U. S. Chemical Export Figures *(Continued)*

| ARTICLES, AND COUNTRIES TO WHICH EXPORTED | UNIT OF QUANTITY | JUNE— | | | | SIX MONTHS ENDING JUNE— | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1931 | | 1932 | | 1931 | | 1932 | |
| | | *Quantity* | *Value* | *Quantity* | *Value* | *Quantity* | *Value* | *Quantity* | *Value* |
| Chemical pigments— | | | | | | | | | |
| Zinc oxide | Lb. | 966,788 | 65,916 | 245,911 | 18,881 | 6,252,650 | 440,120 | 1,911,303 | 140,026 |
| Lithopone | Lb. | 758,843 | 34,039 | 655,754 | 29,689 | 5,043,648 | 224,689 | 4,354,603 | 186,476 |
| Bone black and lampblack | Lb. | 237,265 | 13,008 | 115,863 | 8,115 | 1,491,867 | 72,858 | 753,876 | 43,182 |
| Carbon black or gas black | Lb. | 8,008,450 | 386,043 | 8,151,354 | 373,629 | 45,147,133 | 2,531,624 | 45,713,126 | 2,186,927 |
| Red lead, litharge, and orange mineral | Lb. | 152,679 | 11,547 | | | 3,904,924 | 248,433 | | |
| Red lead | Lb. | | | 36,489 | 1,762 | | | 377,902 | 23,756 |
| Litharge | Lb. | | | 159,787 | 7,000 | | | 1,701,387 | 78,705 |
| White lead | Lb. | 880,392 | 46,927 | | | 5,663,198 | 323,810 | | |
| Dry | Lb. | | | 131,446 | 5,545 | | | 1,881,940 | 86,213 |
| In oil | Lb. | | | 42,269 | 2,809 | | | 485,783 | 36,859 |
| Other chemical pigments | Lb. | 521,898 | 60,326 | 407,246 | 60,697 | 3,623,425 | 440,209 | 2,662,263 | 344,677 |
| Bituminous paints, liquid and plastic | | | 50,425 | | 13,723 | | 244,473 | | 100,300 |
| Paste paint | Lb. | 284,836 | 39,703 | 205,425 | 25,460 | 1,975,154 | 262,994 | 943,080 | 158,313 |
| Kalsomine or cold-water paints, dry | Lb. | 604,578 | 30,098 | 246,721 | 13,798 | 3,293,254 | 169,779 | 2,366,382 | 123,745 |
| Nitrocellulose (pyroxylin) lacquers— | | | | | | | | | |
| Pigmented | Gal. | 40,411 | 107,456 | 17,860 | 50,353 | 191,668 | 551,623 | 122,303 | 328,301 |
| Clear | Gal. | 8,494 | 17,589 | 3,770 | 9,542 | 54,701 | 118,646 | 43,269 | 90,092 |
| Thinner for nitrocellulose lacquers | Gal. | 39,182 | 39,362 | 13,917 | 15,032 | 181,244 | 215,335 | 105,872 | 119,218 |
| Ready-mixed paints, stains, and enamels | Gal. | 149,574 | 332,705 | 88,033 | 191,726 | 956,775 | 1,967,101 | 578,788 | 1,116,543 |
| Varnishes (oil or spirit, and liquid dryers) | Gal. | 31,249 | 46,117 | 19,644 | 24,210 | 200,003 | 309,948 | 150,467 | 182,758 |
| Paint and varnish removers | Gal. | 1,587 | 2,696 | 949 | 1,238 | 10,898 | 16,719 | 7,300 | 8,902 |
| *F.* FERTILIZERS AND FERTILIZER MATERIALS | Ton. | 89,194 | 739,953 | 52,000 | 613,795 | 654,499 | 7,699,305 | 458,649 | 4,337,720 |
| Nitrogenous fertilizer materials— | | | | | | | | | |
| Ammonium sulphate | Ton. | 2,114 | 70,392 | 622 | 14,117 | 54,484 | 1,839,405 | 13,672 | 382,893 |
| Other nitrogenous chemical materials | Ton. | 5,448 | 221,374 | 11,415 | 319,527 | 30,638 | 1,293,683 | 65,202 | 1,856,163 |
| Nitrogenous organic waste materials | Ton. | 128 | 2,864 | 218 | 3,262 | 2,579 | 73,061 | 3,606 | 63,986 |
| Phosphatic fertilizer materials— | | | | | | | | | |
| Phosphate rock— | | | | | | | | | |
| High-grade hard rock | Ton. | 5,961 | 29,818 | 731 | 3,655 | 17,863 | 94,839 | 42,886 | 253,851 |
| Land pebble | Ton. | 69,099 | 282,897 | 34,539 | 149,178 | 456,631 | 1,927,582 | 316,618 | 1,345,691 |
| Superphosphate (acid phosphate) | Ton. | 4,293 | 41,851 | 1,363 | 14,364 | 46,640 | 547,519 | 8,251 | 117,091 |
| Other phosphate materials | Ton. | 119 | 5,973 | 98 | 4,148 | 2,635 | 115,659 | 796 | 36,326 |
| Potassic fertilizer materials— | | | | | | | | | |
| Potassium chloride or muriate | Ton. | 707 | 31,168 | | | 19,466 | 857,057 | 197 | 7,53 |
| Other potash fertilizers | Ton. | | | 3 | 272 | 908 | 34,664 | 197 | 7,15 |
| Concentrated chemical fertilizers— | | | | | | | | | |
| Nitrogenous phosphatic types | Ton. | 1,207 | $48,753 | 2,897 | $100,724 | 19,147 | $783,551 | 6,621 | $242,921 |
| Nitrogenous phosphatic potassic types | Ton. | 12 | 292 | | | 106 | 3,271 | 35 | 1,239 |
| Prepared fertilizer mixtures | Ton. | 106 | 4,571 | 114 | 4,548 | 3,402 | 129,014 | 568 | 22,866 |
| *G.* EXPLOSIVES, FUSES, ETC. | | | 123,861 | | 43,381 | | 1,035,209 | | 594,533 |

# U. S. Chemical Import Figures for June

| ARTICLES, AND COUNTRIES FROM WHICH IMPORTED | UNIT OF QUANTITY | JUNE— | | | | SIX MONTHS ENDING JUNE— | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1931 | | 1932 | | 1931 | | 1932 | |
| | | *Quantity* | *Value* | *Quantity* | *Value* | *Quantity* | *Value* | *Quantity* | *Value* |
| GROUP 8.—CHEMICALS AND RELATED PRODUCTS | | | 5,227,455 | | 3,338,066 | | 46,479,607 | | 25,787,112 |
| *A.* COAL-TAR PRODUCTS | | | 961,277 | | 834,569 | | 5,610,527 | | 4,692,532 |
| Crude | | | | | | | | | |
| Dead or creosote oil—free | Gal. | 3,847,322 | 345,355 | 5,596,059 | 454,976 | 18,857,282 | 1,848,508 | 18,459,270 | 1,630,897 |
| All other—free | | | 71,245 | | 43,602 | | 405,473 | | 369,149 |
| Intermediates— | | | | | | | | | |
| Acids—dut. | Lb. | 112,833 | 4,329 | 12,352 | 3,149 | 476,413 | 26,990 | 408,500 | 108,426 |
| All other—dut. | Lb. | 74,793 | 49,010 | 80,117 | 32,692 | 452,402 | 254,134 | 397,655 | 194,148 |
| Finished products— | | | | | | | | | |
| Colors, dyes, stains, color acids, and color bases, n. e. s.—dut. | Lb. | 395,025 | 458,666 | 214,174 | 244,349 | 2,432,698 | 2,792,090 | 1,869,195 | 2,102,183 |
| Belgium | Lb. | 1,985 | 1,888 | 2,183 | 2,727 | 26,057 | 32,734 | 15,265 | 16,005 |
| France | Lb. | 16,358 | 24,250 | | | 65,739 | 101,554 | 1,799 | 1,880 |
| Germany | Lb. | 293,043 | 325,592 | 173,289 | 196,281 | 1,397,263 | 1,523,640 | 1,109,876 | 1,235,892 |
| Italy | Lb. | 1,747 | 3,578 | | | 13,025 | 14,392 | 2,182 | 2,784 |
| Switzerland | Lb. | 73,377 | 92,150 | 32,447 | 38,444 | 848,821 | 1,027,179 | 591,510 | 694,690 |
| United Kingdom | Lb. | 6,507 | 9,092 | 5,573 | 6,081 | 58,842 | 66,010 | 57,761 | 61,323 |
| Coal-tar medicinals—dut. | Lb. | 1,268 | 8,275 | 2,287 | 15,289 | 22,959 | 109,701 | 13,514 | 94,357 |
| Other finished coal-tar products—dut. | Lb. | 5,104 | 24,397 | 10,155 | 40,512 | 50,035 | 173,631 | 54,964 | 193,372 |
| *B.* MEDICINAL AND PHARMACEUTICAL PREPARATIONS | | | 279,561 | | 233,890 | | 2,188,018 | | 1,649,309 |
| Quinine sulphate—free | Oz. | 64,000 | 22,190 | 35,400 | 9,782 | 632,784 | 238,306 | 334,108 | 111,234 |
| Other quinine and other alkaloids and salts from cinchona bark—free | Oz. | 27,160 | 4,466 | 320 | 199 | 54,236 | 14,800 | 138,104 | 26,313 |
| Other alkaloids, salts, and derivatives—dut. | | | 27,511 | | 21,286 | | 96,069 | | 65,918 |
| Antitoxins, serums, vaccines, etc., and blistering beetles—free | | | | | 10 | | 1,909 | | 851 |
| Menthol—dut. | Lb. | 18,880 | 43,319 | 34,680 | 69,891 | 194,985 | 530,594 | 256,175 | 567,918 |
| Santonin and salts—free | Lb. | 110 | 12,775 | 12 | 745 | 400 | 41,195 | 18 | 1,140 |
| Other medicinals—dut. | | | 1,940 | | 1,348 | | 48,990 | | 25,419 |
| All other preparations, n. e. s.—dut. | | | 167,360 | | 130,629 | | 1,216,155 | | 850,516 |
| *D.* INDUSTRIAL CHEMICALS | | | 1,551,968 | | 882,897 | | 9,326,159 | | 7,317,185 |
| Acetylene, butylene, ethylene, and prophylene derivatives—dut. | Lb. | 150,587 | 19,556 | 30,731 | 5,084 | 318,167 | 47,668 | 151,600 | 19,756 |
| Acids and anhydrides— | | | | | | | | | |
| Acetic or pyroligneous—dut. | Lb. | 1,910,800 | 88,148 | 570,040 | 37,491 | 10,139,750 | 484,817 | 5,896,038 | 336,742 |
| Arsenious (white arsenic)—free | Lb. | 2,144,745 | 53,202 | 1,370,688 | 36,423 | 9,180,430 | 260,211 | 8,142,052 | 214,475 |
| Formic—dut. | Lb. | 10,361 | 534 | | | 70,825 | 4,104 | 35,501 | 2,098 |
| Oxalic—dut. | Lb. | 83,807 | 4,459 | 20,436 | 1,104 | 283,882 | 14,947 | 147,452 | 7,900 |
| Sulphuric (oil of vitrol)—free | Lb. | 270,540 | 2,410 | 169,280 | 937 | 877,029 | 6,591 | 532,938 | 3,853 |
| Tartaric—dut. | Lb. | 117,629 | 24,578 | 207,351 | 29,583 | 1,141,870 | 249,389 | 1,121,035 | 183,982 |
| All other—free | Lb. | | | 113 | 44 | 64,207 | 3,740 | 6,342 | 427 |
| All other—dut. | Lb. | 140,000 | 24,151 | 60,989 | 16,194 | 709,804 | 124,084 | 575,980 | 88,377 |

# U. S. Chemical Import Figures (*Continued*)

| ARTICLES, AND COUNTRIES FROM WHICH IMPORTED | UNIT OF QUANTITY | JUNE— | | | | SIX MONTHS ENDING JUNE— | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | 1931 | | 1932 | | 1931 | | 1932 | |
| GROUP 8.—CHEMICALS AND RELATED PRODUCTS—Continued. | | *Quantity* | *Value* | *Quantity* | *Value* | *Quantity* | *Value* | *Quantity* | *Value* |
| *D.* INDUSTRIAL CHEMICALS—Continued. | | | | | | | | | |
| Alcohols, n. e. s., including fusel oil | dut. | | 1,246 | | 906 | | 6,070 | | 4,733 |
| Ammonium compounds, n. e. s.— | | | | | | | | | |
| Chloride (muriate) | dut. | Lb. 390,777 | 10,020 | 330,771 | 8,579 | 3,070,675 | 88,701 | 2,252,503 | 57,696 |
| Nitrate | dut. | Lb. 113,814 | 3,134 | 718,252 | 16,116 | 3,532,648 | 102,033 | 3,316,824 | 81,602 |
| All other | dut. | Lb. 42,928 | 2,266 | 11,920 | 532 | 289,210 | 16,276 | 87,864 | 4,203 |
| Barium compounds | dut. | Lb. 182,813 | 4,163 | 269,593 | 5,304 | 2,969,225 | 67,147 | 1,130,664 | 26,328 |
| Calcium compounds, n. e. s. | dut. | Lb. | | | | 208,720 | 8,055 | 128,480 | 4,930 |
| Cellulose products, n. e. s.— | | | | | | | | | |
| Acetate | dut. | Lb. 685 | 600 | | | 18,924 | 21,032 | 1,579 | 1,223 |
| All other— | | | | | | | | | |
| Sheets more than 3/1000 inch thick, and other forms | dut. | Lb. 30,941 | 36,697 | 17,310 | 10,097 | 96,844 | 130,068 | 85,643 | 57,372 |
| Sheets and strips, more than 1 inch wide, not over 3/1000 inch thick | dut. | Lb. 1,508 | 725 | 298 | 153 | 26,979 | 12,770 | 13,129 | 9,794 |
| Cobalt oxide | dut. | Lb. 48,755 | $62,978 | 19,725 | $18,892 | 135,305 | $190,218 | 121,579 | $120,970 |
| Copper sulphate (blue vitriol) | free. | Lb. 290,635 | 10,703 | 284,516 | 7,604 | 1,430,519 | 57,063 | [1] 3,242,864 | [1] 88,835 |
| | dut. | Lb. | | 22,125 | 516 | | | [2] 22,125 | [2] 516 |
| Glycerin— | | | | | | | | | |
| Crude | dut. | Lb. 884,843 | 45,355 | 101,840 | 3,946 | 5,303,859 | 296,059 | 2,273,220 | 94,496 |
| Refined | dut. | Lb. 94,696 | 7,864 | 99,204 | 6,173 | 665,150 | 57,692 | 757,506 | 52,031 |
| Iodine, crude | free. | Lb. 36,340 | 127,791 | 33,310 | 117,667 | 189,128 | 689,519 | 161,177 | 547,422 |
| Lime, chlorinated or bleaching powder | dut. | Lb. 172,975 | 5,180 | 161,655 | 5,128 | 975,775 | 31,265 | 1,111,589 | 28,734 |
| Magnesium compounds | dut. | Lb. 1,069,580 | 24,333 | 1,236,334 | 10,858 | 5,049,854 | 100,798 | 5,728,947 | 74,035 |
| Potassium compounds, n. e. s.— | | | | | | | | | |
| Argols, tartar, and wine lees | free. | Lb. 704,482 | 67,704 | 995,055 | 62,735 | 8,306,290 | 782,139 | 7,359,849 | 441,004 |
| Carbonate | dut. | Lb. 1,609,493 | 71,257 | 472,347 | 19,644 | 8,736,113 | 394,094 | 5,633,789 | 231,377 |
| Chlorate and perchlorate | dut. | Lb. 1,020,423 | 36,296 | 1,193,882 | 44,967 | 6,848,974 | 242,716 | 5,786,039 | 214,442 |
| Cream of tartar | dut. | Lb. 11,023 | 2,000 | | | 58,446 | 10,660 | 16,500 | 2,051 |
| Cyanide | free. | Lb. 1,928 | 485 | 55 | 27 | 30,927 | 11,356 | 24,820 | 8,549 |
| Hydroxide (caustic potash) | dut. | Lb. 544,511 | 29,635 | 197,866 | 10,155 | 4,172,890 | 223,529 | 2,515,810 | 132,959 |
| Nitrate, crude (saltpeter) | free. | Ton. 44 | 2,878 | 88 | 4,556 | 7,228 | 364,421 | 11,424 | 597,304 |
| Other potassium compounds | dut. | Lb. 569,102 | 29,468 | 154,020 | 11,436 | 3,765,673 | 181,528 | 1,622,772 | 95,870 |
| Sodium compounds, n. e. s.— | | | | | | | | | |
| Chlorate | dut. | Lb. | | 121,430 | 4,574 | | | 621,430 | 22,841 |
| Sulphate, crude (salt cake) | free. | Lb. 20,080,469 | 110,617 | 13,119,700 | 69,663 | 94,155,819 | 530,267 | 62,420,711 | 334,192 |
| Cyanide | free. | Lb. 2,259,030 | 167,568 | 1,609,871 | 123,103 | 9,514,627 | 717,827 | 9,065,618 | 889,238 |
| Ferrocyanide (yellow prussiate) | dut. | Lb. 85,984 | 7,341 | 40,263 | 3,455 | 763,442 | 65,483 | 219,505 | 18,803 |
| Nitrite | dut. | Lb. 50 | 9 | 900 | 132 | 50 | 9 | 1,920 | 316 |
| Phosphate (except pyrophosphate) | dut. | Lb. 178,712 | 3,170 | 28 | 5 | 999,516 | 15,232 | 37,802 | 830 |
| Other sodium compounds, n. e. s. | free. | Lb. | | | | 19,962 | 2,144 | | |
| | dut. | | 62,843 | | 27,654 | | 377,107 | | 238,546 |
| Radium salts | free. | Grain. 22 | 75,407 | 3 | 9,304 | 99 | 354,975 | 111 | 371,658 |
| Other industrial chemicals | free. | | 89,036 | | 54,701 | | 852,945 | | 728,925 |
| | dut. | | 236,161 | | 97,455 | | 1,129,410 | | 875,750 |
| *E.* PIGMENTS, PAINTS, AND VARNISHES | | | 200,332 | | 123,380 | | 995,553 | | 798,241 |
| Mineral earth pigments— | | | | | | | | | |
| Iron oxide and iron hydroxide | dut. | Lb. 1,536,560 | 29,557 | 788,967 | 13,091 | 5,719,863 | 130,820 | 5,357,107 | 93,959 |
| Ochers and siennas | dut. | Lb. 1,353,999 | 21,991 | 728,338 | 10,918 | 5,406,355 | 98,627 | 4,076,663 | 61,187 |
| Other mineral earth pigments | dut. | | 45,085 | | 22,805 | | 170,446 | | 108,639 |
| Chemical pigments— | | | | | | | | | |
| Lithopone and zinc pigments, n. e. s. | dut. | Lb. 632,643 | 25,092 | 789,512 | 22,114 | 5,637,956 | 229,388 | 6,158,673 | 178,822 |
| Zinc oxide and leaded zinc oxide | dut. | Lb. 355,208 | 21,767 | 257,278 | 13,889 | 1,625,883 | 108,793 | 2,954,647 | 140,188 |
| Other chemical pigments | dut. | Lb. 332,732 | 29,223 | 270,832 | 11,490 | 1,417,335 | 115,263 | 1,558,720 | 104,434 |
| Paints, stains, and enamels | dut. | | 23,672 | | 20,130 | | 123,576 | | 91,103 |
| Varnishes | dut. | Gal. 1,115 | 3,945 | 13,544 | 8,943 | 8,961 | 18,640 | 19,503 | 19,909 |
| *F.* FERTILIZERS AND MATERIALS | | Ton. 57,966 | 1,941,257 | 56,420 | 1,060,253 | 798,881 | 26,421,404 | 464,903 | 9,903,337 |
| Nitrogenous— | | | | | | | | | |
| Ammonium sulphate | free. | Ton. 589 | 20,713 | 30,672 | 494,195 | 33,911 | 1,208,963 | 165,441 | 3,206,771 |
| Ammonium sulphate-nitrate | free. | Ton. | | | | 2,255 | 118,778 | 75 | 3,784 |
| Calcium cyanamide or lime nitrogen | free. | Ton. 1,687 | 65,989 | 2,604 | 69,023 | 35,839 | 1,175,244 | 34,688 | 857,979 |
| Calcium nitrate | free. | Ton. 1 | 33 | | | 26,075 | 859,128 | 3,705 | 94,321 |
| Guano | free. | Ton. 57 | 1,264 | 20 | 273 | 13,464 | 495,656 | 3,278 | 53,111 |
| Dried blood | free. | Ton. 587 | 22,861 | 141 | 3,054 | 5,451 | 254,737 | 2,454 | 65,073 |
| Sodium nitrate | free. | Ton. 29,711 | 1,221,719 | 647 | 22,017 | 365,365 | 14,141,982 | 44,954 | 1,337,490 |
| Urea and calurea | free. | Ton. 137 | 12,812 | 80 | 8,265 | 3,834 | 310,951 | 2,751 | 208,435 |
| Other nitrogenous | free. | Ton. 3,225 | 53,534 | 3,236 | 83,408 | 40,700 | 1,345,113 | 25,572 | 698,592 |
| Phosphates— | | | | | | | | | |
| Bone, ash, dust, and meal, and animal carbon fertilizers | free. | Ton. 3,339 | 64,153 | 1,210 | 21,576 | 28,680 | 685,358 | 16,586 | 292,221 |
| Other phosphate materials | free. | Ton. | | 1,944 | 34,355 | 9,411 | 120,936 | 20,604 | 294,015 |
| Potash fertilizers— | | | | | | | | | |
| Chloride, crude (muriate) | free. | Ton. 9,375 | 328,861 | 5,088 | 169,995 | 66,799 | 2,525,944 | 29,905 | 1,091,660 |
| Kainite | free. | Ton. 616 | 5,968 | 671 | 8,859 | 40,593 | 380,987 | 32,522 | 301,558 |
| Manure salts | free. | Ton. 4,082 | 52,885 | 1,201 | 36,782 | 70,568 | 1,013,725 | 47,922 | 625,032 |
| Sulphate, crude | free. | Ton. 557 | 27,931 | 553 | 20,869 | 20,188 | 947,635 | 9,480 | 422,667 |
| Other postash, bearing substances | free. | Ton. 20 | 336 | 20 | 172 | 293 | 2,446 | 290 | 2,475 |
| Fertilizers, compounded, or chemically combined, containing nitrogen, phosphoric acid, and potash | free. | Ton. 196 | 11,323 | 246 | 12,540 | 8,964 | 533,360 | 998 | 54,303 |
| All other | free. | Ton. 3,787 | 50,875 | 8,087 | 74,864 | 25,891 | 300,401 | 23,678 | 291,850 |
| *G.* EXPLOSIVES | | | 31,606 | | 38,986 | | 428,905 | | 294,947 |
| Powder and other explosives, n. e. s. | dut. | | | | | | 132,474 | | 6,406 |
| Firecrackers | dut. | Lb. 214,524 | 29,832 | 269,901 | 37,376 | 1,892,282 | 273,683 | 1,899,425 | 279,679 |
| Fireworks and ammunition | dut. | | 1,774 | | 1,610 | | 22,748 | | 8,862 |
| *H.* SOAP AND TOILET PREPARATIONS | | | 242,182 | | 161,202 | | 1,445,348 | | 1,083,773 |
| Soap— | | | | | | | | | |
| Castile | dut. | Lb. 341,883 | 30,665 | 158,377 | 12,156 | 1,435,747 | 135,744 | 989,016 | 79,010 |
| Toilet | dut. | Lb. 89,276 | 25,716 | 42,028 | 13,366 | 651,375 | 177,598 | 477,942 | 122,143 |
| All other | dut. | Lb. 70,526 | 9,300 | 99,110 | 7,725 | 678,064 | 78,178 | 777,551 | 61,792 |
| Perfume materials | free. | Lb. 527 | 38,451 | 407 | 34,948 | 4,106 | 230,259 | 4,272 | 215,326 |
| | dut. | | 81,969 | | 39,541 | | 422,083 | | 320,177 |
| Perfumery, bay rum, and toilet water | dut. | | 20,165 | | 27,794 | | 206,313 | | 153,585 |
| Bath salts | dut. | Lb. 604 | 381 | 2,907 | 349 | 19,126 | 4,531 | 10,826 | 1,705 |
| Cosmetics, powders, creams, etc. | dut. | | 35,535 | | 25,323 | | 190,642 | | 130,035 |
| *I.* ARTICLES IN GROUP 8, ORDINARILY DUTIABLE, IMPORTED FREE | free. | | 19,272 | | 2,889 | | 63,692 | | 47,788 |

[1] Ending June 20, 1932.

[2] Beginning June 21, 1932.

Compiled from Monthly Summary of Foreign Trade of the United States, of the Dept. of Commerce

# The Trend of Prices

**Optimism develops in business as financial and commodity markets register remarkable gains. Manufacturing activity fails to show, however, with the exception of textiles, any definite improvement. Chemical price indices reflect sharp reduction in nitrate and chlorine. Chemical Markets' Average Price is slightly lower, N. Y. Journal of Commerce's index of chemical prices is also lower, while the trend of the National Fertilizer Association's indices is mixed.**

The extraordinary recovery in the past seven weeks in the financial and commodity markets has completely revamped the sentiment of the country. While it is undeniably true that activity in manufacturing lines has not improved in the same proportion as values on the various exchanges, the feeling is now widespread that the worst is now passed and that the coming months will disclose a gradual gain in the volume of production and in prices for manufactured goods.

The better tone in the chemical industry was tempered by the drastic revision in sodium nitrate prices and lower prices for chlorine. The nitrogen situation is badly muddled and the reduction in nitrate prices was not unexpected. The competitive situation in chlorine, on the other hand, was somewhat surprising, although it had been suspected that electrolytic caustic producers have been forced to build up rather heavy surpluses.

Advances in the day to day changes in chemical prices are beginning to outnumber the declines. Outstanding in the months' revisions were higher levels for lead pigments, caused by the rise in the metal; several fertilizer materials including steam bone, bone meal, dried blood and sulfate of ammonia; and all of the tin salts. The rise in ammonium sulfate was without a great deal of significance at the moment, as very little material is being offered. Among the declines mention should be made of tartaric acid, citric acid, methyl acetone, titanium dioxide and the titanium pigments.

CHEMICAL MARKETS' Average Price declined from .0632 to 0630. The rise in dry red lead failed to offset the losses in sodium nitrate and chlorine. The *Annalist* index rose from 95.0 on July 26 to 95.2 on Aug. 16, while that of the *N. Y. Journal of Commerce* declined from 81.5 on July 25 to 78.6 on Aug. 27. The changes in the various indices of the N. F. A. are shown:

| | *Fats & Oils* | *Chem & Drugs* | *Fert. Mat.* | *M. Fert.* | *All Groups* |
|---|---|---|---|---|---|
| July 30... | 40.5 | 87.4 | 67.7 | 71.8 | 61.5 |
| Aug. 6.... | 41.9 | 87.4 | 68.8 | 71.8 | 61.3 |
| Aug. 13... | 43.3 | 87.4 | 68.1 | 71.8 | 62.3 |
| Aug. 20... | 42.2 | 87.4 | 68.5 | 71.8 | 62.1 |

Actual shipments going into the consuming industries were only slightly better in August. The greatest improvement occurred in the textile industry. Seasonal items were moving in encouraging volume. Producers are hopeful that with the end of the summer season in sight, requirements for the paper, paint and lacquer, plastics, tanning and plating industries will improve. All signs point to the third quarter being the best one of the year. The rise in cotton and grains holds a long-term promise of better tonnages in fertilizers for next year.

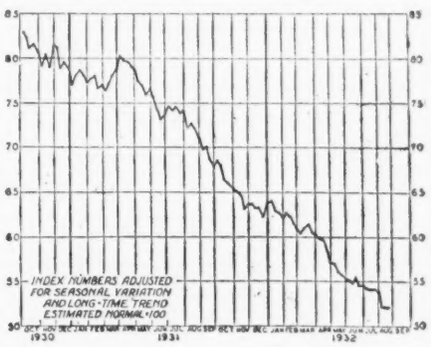
Consumers and producers are giving serious thought to the coming contract season. The chlorine schedule has already been reduced. In most quarters it is felt that if business continues to improve that the alkali prices will be repeated. No change is looked for in acids. Broadly speaking, the key to the situation is how far the present improvement will go. For this reason it is likely that announcements will be withheld until late in October.

## General Business

Trade reports are generally more cheerful. Retail demand has increased and dealers' stocks are low. While heavy manufacturing industries are still dull, signs here and there are encouraging. Employment, particularly in the textile field, is better. Mills and factories are being reopened and large companies are again ordering substantial quantities. Steel producers are optimistic, even though actual trade is still slow. The automobile centers were quiet during August, but several plants are ready to start production after Labor Day. The advances made in cotton, wheat and corn have increased tremendously the purchasing capacity of the farming sections.

The most encouraging sign of all is, however, the continued improvement in the various indices of raw commodity prices. Such action has already had the effect of drawing in consumers in large numbers. Fisher's index of wholesale commodity prices advanced from 60.9 on July 29 to 61.9 on Aug. 26. It stood at 59.6 on July 1. The National Fertilizer Association index advanced from 61.5 on July 30 to 62.1 on Aug. 20; that of the *N. Y. Journal of Commerce* from 56.9 on Aug. 1 to 59.8 on Aug. 27; and that of the *Annalist* from 92.2 on July 26 to 95.2 on Aug. 16.

The *N. Y. Times* weekly business index registered a new low mark for the depression. However, the week ending Aug. 20 showed no further decline from the previous week.



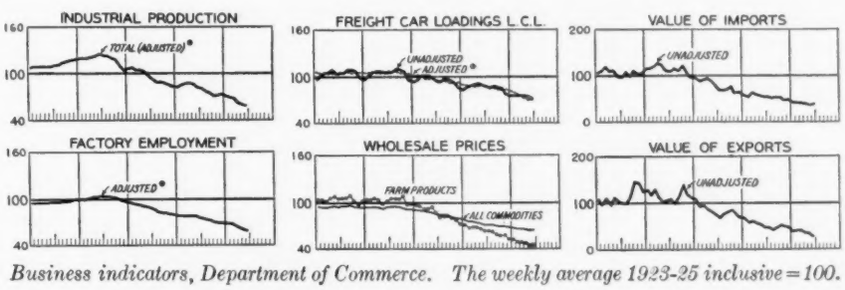

| | *Week Ended* | | |
|---|---|---|---|
| | *Aug. 20 1932* | *Aug. 13 1932* | *Aug. 22 1931* |
| Freight car loadings... | 48.7 | 48.8 | 70.4 |
| Steel mill activity..... | 19.8 | 19.0 | 44.6 |
| Elec. power production. | 67.2 | 67.1 | 82.8 |
| Automobile production. | 26.8 | *30.5 | 52.9 |
| Carded cot. cloth prod. | 74.8 | 71.2 | 90.6 |
| Combined index..... | 52.2 | 52.2 | 71.9 |

*Revised.

## Indices of Business

| | Latest Available Month | Previous Month | Year Ago |
|---|---|---|---|
| Automobile Production, June | 183,092 | 184,284 | 250,640 |
| †Brokers Loans, Aug. 1 | $241 | $243 | $1,344 |
| *Building Contracts, July | $128,768 | $113,075 | $285,997 |
| *Car Loadings, Aug. 20 | 518 | 512 | 748 |
| †Commercial Paper, July 31 | $100 | $103 | $289 |
| Payrolls, June | 42.6 | 46.2 | 67.6 |
| *Mail Order Sales, June | $38,718 | $39,745 | $50,070 |
| Failures, Dun, July | 2,707 | 2,688 | 1,983 |
| *Merchandise Imports, July | $79,000 | $121,000 | $174,460 |
| *Merchandise Exports, July | $107,000 | $115,000 | $180,772 |
| Furnaces in Blast, Aug. 17 | 16.1 | 16.1 | 26.1 |
| *Steel Orders, July 31 | 1,966 | 2,034 | 3,404 |

*000 omitted. †000,000 omitted.




*Business indicators, Department of Commerce. The weekly average 1923-25 inclusive = 100.*

# Prices Current

***Heavy Chemicals, Coaltar Products, Dye-and-Tanstuffs, Colors and Pigments, Fillers and Sizes, Fertilizer and Insecticide Materials, Naval Stores, Fatty Oils, etc.***

**Chemical prices quoted** are of American manufacturers for spot New York, immediate shipment, unless otherwise specified. Products sold f. o. b. works are specified as such. Imported chemicals are so designated. Resale stocks when a market factor are quoted in addition to makers' prices and indicated "second hands."

**Oils** are quoted spot New York, ex-dock. Quotations f.o.b. mills, or for spot goods at the Pacific Coast are so designated.

**Raw materials** are quoted New York, f. o. b., or ex-dock. Materials sold f. o. b. works or delivered are so designated.

**The current range** is not "bid and asked," but are prices from different sellers, based on varying grades or quantities or both. Containers named are the original packages most commonly used.

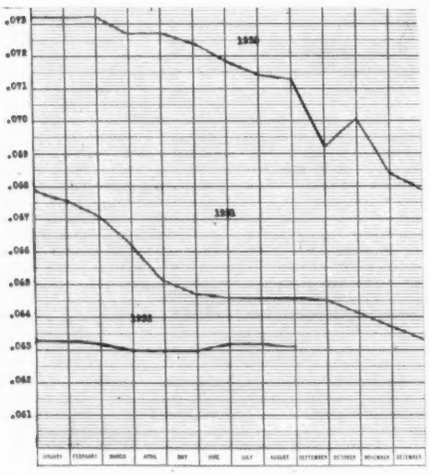
**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

## Important Price Changes

| Advances | August | July |
|---|---|---|
| Acid, Stearic, single | $ .07½ | $ .07 |
| Ammonium Sulfate | 22.00 | 20.50 |
| Blood, dried | 1.75 | 1.50 |
| Bone Meal | 23.00 | 22.00 |
| Camphor, slabs | .41 | .40 |
| Dry Red Lead | .07 | .06¾ |
| Litharge | .06 | .05¾ |
| Orange Mineral | .10¾ | .10½ |
| Shellac, T. N. | .11½ | .10½ |
| Steamed Bone | 22.00 | 18.50 |
| Tin crystals | .24 | .23 |
| Tin oxide | .26½ | .25½ |
| Tin tetrachloride | .1645 | .1555 |
| Wattle Bark | 27.00 | 26.00 |
| Wax Carnauba, No. 2, N.C. | .15 | .13 |

| Declines | | |
|---|---|---|
| Acid, citric | .29 | .30 |
| Acid, tartaric, unp. | .22 | .23 |
| dom | .22½ | .23 |
| Chlorine, tanks | 1.55 | 1.75 |
| Egg Albumen | .78 | .79 |
| Mercury | 47.50 | 50.00 |
| Sodium nitrate, bulk | 22.40 | 33.40 |
| 200 lb bags | 23.70 | 34.70 |
| 100 lb bags | 24.40 | 35.40 |
| Tartar Emetic | .21¾ | .22¾ |
| Titanium dioxide, bbls | .17¼ | .18 |
| Wax, Japan | .06¾ | .07 |

## CHEMICAL MARKETS' Average Price Registers Further Decline



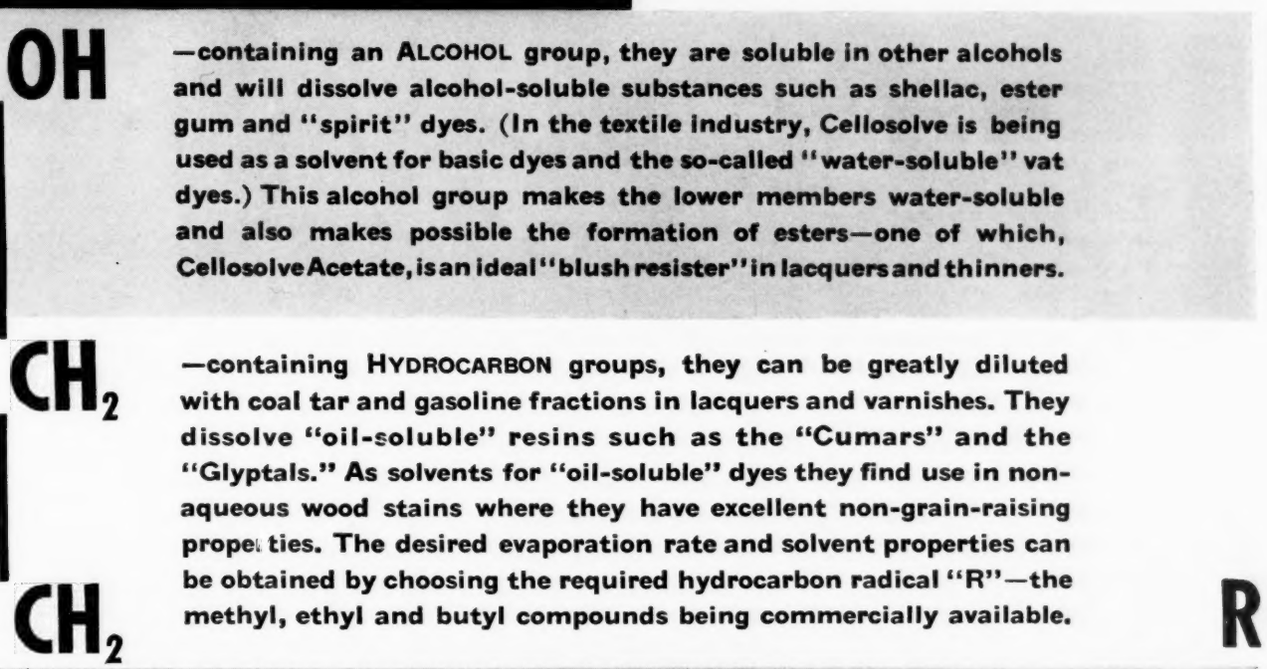

CHEMICAL MARKETS' Average Price for 20 representative industrial chemicals showed a slight decline in August due to the important reductions in sodium nitrate and chlorine. The only other change was that made in dry red lead caused by the stiffening in the metal market. The price stood at .0630 on Aug. 31 against .0632 on July 31, and .0646 in August 1931, and .0714 in August 1930.

| | Current Market | | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|---|
| Acetaldehyde, drs 1c-1 wks...lb. | .18½ | .21 | .18½ | .21 | .18½ | .21 | .18½ | .21 |
| Acetaldol, 50 gal dr.....lb. | .27 | .31 | .27 | .31 | .27 | .31 | .27 | .31 |
| Acetamide.....lb. | .95 | 1.35 | .95 | 1.35 | .95 | 1.35 | 1.20 | 1.35 |
| Acetanilid, tech, 150 lb bbl...lb. | .20 | .21 | .20 | .23 | .22 | .23 | .21 | .23 |
| Acetic Anhydride, 92-95%, 100 lb cbys.....lb. | .21 | .25 | .21 | .25 | .21 | .25 | .25 | .29 |
| Acetin, tech drums.....lb. | .30 | .32 | .30 | .32 | .30 | .32 | .30 | .32 |
| Acetone, tanks.....lb. | ..... | .10 | ... | .10 | .10 | .10½ | .11 | .12 |
| Acetone Oil, bbls NY.....gal.. | 1.15 | 1.25 | 1.15 | 1.25 | 1.15 | 1.25 | 1.15 | 1.25 |
| Acetyl Chloride, 100 lb cby...lb. | .55 | .68 | .55 | .68 | .55 | .68 | .55 | .68 |
| Acetylene Tetrachloride (see tetrachlorethane)..... | | | | | | | | |
| **Acids** | | | | | | | | |
| Acid Abietic..... | .12 | .12 | .12 | .12 | .12 | .12 | ..... | ..... |
| Acetic, 28% 400 lb bbls c-1 wks .....100 lb. | 2.65 | 2.75 | 2.40 | 2.75 | 2.40 | 2.60 | 2.60 | 3.88 |
| Glacial, bbl c-1 wk....100 lb. | ..... | 9.14 | 8.35 | 9.14 | 8.35 | 9.23 | 9.23 | 13.68 |
| Glacial, tanks..... | ..... | 8.89 | 8.10 | 8.89 | 8.10 | 8.98 | 8.98 | 13.43 |
| Adipic..... | .72 | .72 | .72 | .72 | .72 | .72 | ..... | ..... |
| Anthranilic, refd, bbls.....lb. | .85 | .95 | .85 | .95 | .85 | .95 | .85 | 1.00 |
| Technical, bbls.....lb. | .65 | .70 | .65 | .70 | .65 | .80 | .75 | .80 |
| Battery, cbys.....100 lb. | 1.60 | 2.25 | 1.60 | 2.25 | 1.60 | 2.25 | 1.60 | 2.25 |
| Benzoic, tech, 100 lb bbls....lb. | .35 | .45 | .35 | .45 | .35 | .45 | .40 | .53 |
| Boric, powd, 250 lb. bbls. .....lb. | .0425 | .05 | .0425 | .07 | .06½ | .07¾ | .06¾ | .07¾ |
| Broenner's, bbls.....lb. | 1.20 | 1.25 | 1.20 | 1.25 | 1.20 | 1.25 | 1.20 | 1.25 |
| Butyric, 100% basis cbys....lb. | .80 | .85 | .80 | .85 | .80 | .85 | .80 | .90 |
| Camphoric.....lb. | ..... | 5.25 | ..... | 5.25 | ..... | 5.25 | 5.25 | 5.25 |
| Chlorosulfonic, 1500 lb drums wks.....lb. | .04½ | .05½ | .04½ | .05½ | .04½ | .05½ | .04½ | .05½ |
| Chromic, 99¾%, drs.....lb. | .12 | .13¾ | .12 | .14½ | .14½ | .17 | .15 | .19 |
| Chromotropic, 300 lb bbls....lb. | 1.00 | 1.06 | 1.00 | 1.06 | 1.00 | 1.06 | 1.00 | 1.06 |
| Citric, USP, crystals, 230 lb. bbls.....lb. | .29 | .30 | .29 | .33½ | .33½ | .43 | .40 | .59 |
| Cleve's, 250 lb bbls.....lb. | .52 | .54 | .52 | .54 | .52 | .54 | .52 | .54 |
| Cresylic, 95%, dark drs NY.gal. | .40 | .41 | .40 | .47 | .42 | .60 | .54 | .70 |
| 97-99%, pale drs NY.....gal. | .45 | .49 | .45 | .50 | .49 | .60 | .58 | .77 |
| Formic, tech 90%, 140 lb. cby.....lb. | .10½ | .12 | .10½ | .12 | .10½ | .12 | .10½ | .12 |
| Gallic, tech, bbls.....lb. | .60 | .70 | .60 | .70 | .60 | .70 | .50 | .55 |
| USP, bbls.....lb. | ..... | .74 | ..... | .74 | ..... | .74 | .74 | .74 |
| Gamma, 225 lb bbls wks.....fb | .75 | .77 | .75 | .80 | .77 | .80 | .77 | .80 |
| H, 225 lb bbls wks.....lb. | .60 | .65 | .60 | .65 | 60 | .70 | .65 | .70 |
| Hydriodic, USP, 10% soln cby lb. | .60 | .61 | .60 | .67 | ..... | .67 | .67 | .67 |
| Hydrobromic, 48%, coml, 155 lb cbys wks.....lb. | .45 | .48 | .45 | .48 | .45 | .48 | .45 | .48 |
| Hydrochloric, CP, see Acid Muriatic..... | | | | | | | ..... | ..... |
| Hydrocyanic, cylinders wks .lb. | .80 | .90 | .80 | .90 | .80 | .90 | .80 | .90 |
| Hydrofluoric, 30%, 400 lb bbls wks.....lb. | ..... | .06 | ..... | .06 | ..... | .06 | .06 | .06¼ |
| Hydrofluosilicic, 35%, 400 lb. bbls wks.....lb. | .11 | .12 | .11 | .12 | .11 | .12 | .11 | .12 |
| Hypophosphorous, 30%, USP, demijohns .....lb. | .75 | .80 | .75 | .85 | ..... | .85 | .85 | .85 |
| Lactic, 22%, dark, 500 lb bbls lb. | .04 | .04½ | .04 | .04½ | .04 | .04½ | .04 | .05 |
| 44%, light, 500 lb bbls.....lb. | .11½ | .12 | .11½ | .12 | .11½ | .12 | .11 | .12 |
| Laurent's, 250 lb bbls.....lb. | .36 | .42 | .36 | .42 | .36 | .42 | .36 | .42 |
| Linoleic.....lb. | .16 | .16 | .16 | .16 | .16 | 16 | ..... | ..... |
| Malic, powd, kegs.....lb. | .45 | .60 | .45 | .60 | .45 | .60 | .45 | .60 |
| Metanilic, 250 lb bbls.....lb. | .60 | .65 | .60 | .65 | .60 | .65 | .60 | .65 |
| Mixed Sulfuric - Nitric..... tanks wks.....N unit | .07 | .07½ | .07 | .07½ | .07 | .07½ | .07 | .07½ |
| tanks wks.....S unit | .008 | .01 | .008 | .01 | .008 | .01 | .008 | .01 |
| Monochloroacetic, tech bbl...lb. | .20 | .30 | .20 | .30 | .20 | .30 | .18 | .30 |
| Monosulfonic, bbls.....lb. | 1.55 | 1.60 | 1.55 | 1.70 | 1.65 | 1.70 | 1.65 | 1.70 |
| Muriatic, 18 deg, 120 lb cbys c-1 wks.....100 lb. | ..... | 1.35 | ..... | 1.35 | ..... | 1.35 | 1.35 | 1.35 |
| tanks, wks.....100 lb. | ..... | 1.00 | ..... | 1.00 | ..... | 1.00 | 1.00 | 1.00 |
| 20 degrees, cbys wks...100 lb. | ..... | 1.45 | ..... | 1.45 | ..... | 1.45 | 1.45 | ..... |
| N & W, 250 lb bbls..... | .85 | .95 | .85 | .95 | .85 | .95 | .85 | .95 |
| Naphthionic, tech, 250 lb..... | .60 | .65 | .60 | .65 | .60 | .65 | ..... | Nom. |
| Nitric, 36 deg, 135 lb cbys c-wks. .....100 lb. | ..... | 5.00 | ..... | 5.00 | ..... | 5.00 | 5.00 | 5.00 |
| 40 deg, 135 lb cbys, c-1 wks.....100 lb. | ..... | 6.00 | ..... | 6.00 | ..... | 6.00 | 6.00 | 6.00 |
| Oxalic, 300 lb bbls wks NY....lb. | .11 | .11¼ | .11 | .11¼ | .10¾ | .11¼ | .11 | .11¼ |
| Phosphoric 50%, U. S. P.....lb. | ..... | .14 | ..... | .14 | ..... | .14 | .14 | .14 |
| Syrupy, USP, 70 lb drs....lb. | ..... | .14 | ..... | .14 | ..... | .14 | .14 | .14 |
| Picramic, 300 lb bbls.....lb. | .65 | .70 | .65 | .70 | .65 | .70 | .65 | .70 |
| Picric, kegs.....lb. | .30 | .50 | .30 | .50 | .30 | .50 | .30 | .50 |
| Pyrogallic, crystals..... .....lb. | 1.45 | 1.50 | 1.45 | 1.60 | 1.50 | 1.60 | 1.30 | 1.60 |
| Salicylic, tech, 125 lb bbl.....lb. | .33 | .37 | .33 | .37 | .33 | .37 | .33 | .37 |
| Sulfanilic, 250 lb. bbls.....lb. | .14½ | .15 | .14½ | .16 | .15 | .16 | .15 | .16 |
| Sulfuric, 66 deg, 180 lb cbys 1c-1 wks.....100 lb. | 1.60 | 1.95 | 1.60 | 1.95 | 1.60 | 1.95 | 1.60 | 1.95 |
| tanks, wks, ton | ..... | 15.00 | .... | 15.00 | ..... | 15.00 | 15.00 | 15.50 |
| 1500 lb dr wks.....100 lb. | 1.50 | 1.65 | 1.50 | 1.65 | 1.65 | 1.50 | 1.50 | 1.65 |
| 60°, 1500 lb dr wks....100 lb. | 1.27½ | 1.42½ | 1.27½ | 1.42½ | 1.42½ | 1.27½ | 1.27½ | 1.42½ |

# CELLOSOLVE* COMPOUNDS

"the ethers of ethylene glycol"
at new low prices

"Like dissolves like" runs the chemical rule and since each of the Cellosolve compounds belongs in three major chemical families—it is little wonder that they exert marked solvent power on a host of substances—soaps, greases, gums, resins, dyes, cellulose esters and ethers.




—containing an ALCOHOL group, they are soluble in other alcohols and will dissolve alcohol-soluble substances such as shellac, ester gum and "spirit" dyes. (In the textile industry, Cellosolve is being used as a solvent for basic dyes and the so-called "water-soluble" vat dyes.) This alcohol group makes the lower members water-soluble and also makes possible the formation of esters—one of which, Cellosolve Acetate, is an ideal "blush resister" in lacquers and thinners.

—containing HYDROCARBON groups, they can be greatly diluted with coal tar and gasoline fractions in lacquers and varnishes. They dissolve "oil-soluble" resins such as the "Cumars" and the "Glyptals." As solvents for "oil-soluble" dyes they find use in non-aqueous wood stains where they have excellent non-grain-raising properties. The desired evaporation rate and solvent properties can be obtained by choosing the required hydrocarbon radical "R"—the methyl, ethyl and butyl compounds being commercially available.

—containing an ETHER as well as an alcohol group, they are the most powerful and most stable of the cellulose ester solvents (hence their trade-name). Cellosolve has the highest toluol dilution ratio of any of the commonly used lacquer solvents and Butyl Cellosolve tops the list of dilution ratios with respect to gasoline.

## CARBIDE AND CARBON CHEMICALS CORPORATION

| | | |
|---|---|---|
| ACETONE | DIETHYLENE GLYCOL | METHYL ACETONE |
| BUTYL ACETATE | DIOXAN | METHYL CELLOSOLVE★ |
| BUTYL ALCOHOL | ETHYL ETHER | PROPYLENE CHLORHYDRIN |
| BUTYL CARBITOL★ | ETHYLENE CHLORHYDRIN | PROPYLENE DICHLORIDE |
| BUTYL CELLOSOLVE★ | ETHYLENE DICHLORIDE | PROPYLENE GLYCOL |
| BUTYRALDEHYDE | ETHYLENE GLYCOL | PROPYLENE OXIDE |
| CARBITOL★ | ETHYLENE OXIDE | TRIETHANOLAMINE |
| CARBOXIDE★ | ISOPROPANOL | TRIETHYLENE GLYCOL |
| CELLOSOLVE★ | ISOPROPYL ETHER | VINYL CHLORIDE |
| CELLOSOLVE★ ACETATE | METHANOL | VINYLITE★ RESINS |
| DICHLORETHYL ETHER | METHYL ACETATE | |

| | | |
|---|---|---|
| ETHYLENE | BUTANE | PROPYLENE |
| PROPANE | ETHANE | PYROFAX★ |
| ACTIVATED CARBON | ISOBUTANE | ★ Trade-mark Registered |

**30 East 42nd Street, New York**
**230 N. Michigan Ave., Chicago**

*Unit of Union Carbide* UCC *and Carbon Corporation*

Technical Division CM-9-32
CARBIDE AND CARBON CHEMICALS CORPORATION
30 East 42nd Street, New York, N. Y.
Please send information on ☐ Methyl Cellosolve, ☐ Butyl Cellosolve, ☐ Cellosolve, ☐ Cellosolve Acetate.

Name_____ Company_____
Street_____ City_____ State_____

# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

**Acetone** — The situation in this commodity has changed but very little. Lacquer producers are operating at reduced schedules, due largely to the slackening off of automobile production. With the opening of several plants in the Detroit area some slight betterment is looked for in the near future. In the meanwhile, consumers are buying relatively small quantities. Sales of paint, varnish and lacquer products during June, as reported to the Bureau of Census by 588 manufacturers, aggregated $19,796,123 in value, compared with a revised aggregate of $24,981,441 in May and $28,587,155 in June a year ago. Total classified sales for June, reported by 323 establishments, were $11,652,758, against $14,660,257 in May. June trade sales were $7,564,167, compared with $9,793,991 in May. Industrial sales in June were $4,088,591, of which $3,056,768 were paint and varnish and $1,031,823 were lacquer. This compared with a total of $4,866,266, of which $3,421,515 were paint and varnish and $1,444,751 were lacquer. Total sales reported by 588 manufacturers from January to June totaled $117,610,217, against $161,845,198 in the corresponding period of 1931.

**Acid Chromic** — The shutdown of a number of plants in the Detroit area effected the volume. Prices were unchanged.

**Acid Citric** — Producers announced a further reduction in July, bringing the present level down to 29c. The competitive position between domestic and imported material is responsible for the continued downward revision in prices. The falling off in Italian output of citric acid has been even more marked than in tartaric acid, the competition of foreign producers being intensified and aggravated by the availability in increasing amount of citric acid produced by fermentation processes. For the four years 1928 to 1931, inclusive, the Italian production figures for lime citrate have been 4,544 tons, 3,784 tons, 10,700 tons and 5,501 tons, respectively. For citric acid itself the figures have been 4,058 tons, 3,703 tons, 3,789 tons and 2,197 tons, respectively. The export prices for Italian citric acid declined by over 30 per cent during the year without there being any compensating reduction in raw material prices.

**Acid Sulfuric** — Shipments were at a very low level in August. Producers are carefully holding down production to meet the smaller demand and schedule prices were maintained. Production of sulfuric acid by manufacturers of superphosphate during June totaled 45,039 short tons, according to a preliminary estimate by the Bureau of Census. This compared with

| | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|
| Oleum, 20%, 1500 lb. drs 1c-1 wks ton | ..... | 18.50 | ..... | 18.50 | ..... | 18.50 | 18.50 | 18.50 |
| 40%, 1c-1 wks net ton | ..... | 42.00 | ..... | 42.00 | ..... | 42.00 | 42.00 | 42.00 |
| Tannic, tech, 300 lb bbls lb. | .23 | .40 | .23 | .40 | .23 | .40 | .23 | .40 |
| Tartaric, USP, gran. powd, 300 lb bbls lb. | .22½ | .23 | .22½ | .25½ | .25½ | .29½ | .33 | .38½ |
| Tobias, 250 lb bbls lb. | .75 | .80 | .75 | .85 | .80 | .85 | .85 | .85 |
| Trichloroacetic bottles lb. | ..... | 2.75 | ..... | 2.75 | ..... | 2.75 | 2.75 | 2.75 |
| Kegs lb. | ..... | 2.00 | ..... | 2.00 | ..... | 2.00 | 2.00 | 2.00 |
| Tungstic, bbls lb. | 1.40 | 1.70 | 1.40 | 1.70 | 1.40 | 1.70 | 1.40 | 1.70 |
| Albumen, blood, 225 lb bbls lb. | .35 | .40 | .35 | .40 | .38 | .40 | .38 | .40 |
| dark bbls., lb. | .10 | .17 | .10 | .20 | .12 | .20 | .12 | .20 |
| Egg, edible lb. | .78 | .79 | .75 | .90 | .55 | .60 | .55 | .75 |
| Technical, 200 lb cases lb. | .62 | .66 | .62 | .66 | .48 | .66 | .50 | .73 |
| Vegetable, edible lb. | .60 | .65 | .60 | .65 | .60 | .65 | .60 | .65 |
| Technical lb. | .50 | .55 | .50 | .55 | .50 | .55 | .50 | .55 |
| **Alcohol** | | | | | | | | |
| Alcohol Butyl, Normal, 50 gal drs c-1 wks lb. | ..... | .123 | .123 | .1595 | .1495 | .17½ | .17½ | .18½ |
| Drums, 1-c-1 wks lb. | ..... | .128 | .128 | .1645 | .1545 | .17½ | .17½ | .18½ |
| Tank cars wks lb. | ..... | .113 | .113 | .143 | .143 | .16¼ | .16¼ | .17¼ |
| Amyl (from pentane) Tanks wks lb. | ..... | .176 | .176 | .203 | .203 | .236 | .236 | .236 |
| Diacetone, 50 gal drs del gal. | 1.42 | 1.60 | 1.42 | 1.60 | 1.42 | 1.60 | 1.42 | 1.60 |
| Ethyl, USP, 190 pf, 50 gal. bbls gal. | 2.56½ | 2.65 | 2.55 | 2.65 | 2.37 | 2.75 | 2.63 | 2.75 |
| Anhydrous, drums gal. | .54 | .58 | .54 | .58 | .54 | .60 | .56 | .71 |
| No. 5, *188 pf, 50 gal. drs. drums extra gal. | ..... | .396* | .27 | .396 | .27 | .44 | .40 | 50 |
| Isopropyl, ref, gal drs gal. | .60 | .65 | .60 | .65 | .60 | 1.00 | .60 | 1.00 |
| Propyl Normal, 50 gal dr. gal. | ..... | .75 | ..... | .75 | ..... | 1.00 | 1.00 | 1.00 |
| Aldehyde Ammonia, 100 gal drlb. | .80 | .82 | .80 | .82 | .80 | .82 | .80 | .82 |
| Alpha-Naphthol, crude, 300 lb. bbls lb. | .57 | .58 | .57 | .65 | .60 | .65 | .60 | .65 |
| Alpha-Naphthylamine, 350 lb. bbls lb. | .32 | .34 | .32 | .34 | .32 | .34 | .32 | .34 |
| Alum Ammonia, lump, 400 lb. bbls, 1-c-1 wks 100 lb. | 3.00 | 3.25 | 3.00 | 3.25 | 3.00 | 3.50 | 3.20 | 3.50 |
| Chrome, 500 lb casks, wks 100 lb. | 4.50 | 5.25 | 4.50 | 5.25 | 4.50 | 5.25 | 4.50 | 5.25 |
| Potash, lump, 400 lb casks wks 100 lb. | 3.00 | 3.50 | 3.00 | 3.50 | 3.00 | 3.50 | 3.10 | 3.50 |
| Soda, ground, 400 lb bbls wks 100 lb. | 3.50 | 3.75 | 3.50 | 3.75 | 3.50 | 3.75 | 3.50 | 3.75 |
| Aluminum Metal, c-1 NY 100 lb. | 22.90 | 24.30 | 22.90 | 24.30 | 22.90 | 24.30 | 24.30 | 24.30 |
| Chloride Anhydrous lb. | .05 | .09 | .05 | .09 | .05 | .09 | .05 | .15 |
| Hydrate, 96%, light, 90 lb. bbls lb. | .15 | .16½ | .15 | .17 | .16 | .17 | .16 | .18 |
| Stearate, 100 lb bbls lb. | .15 | .17 | .15 | .21 | .18 | .22 | .19 | .26 |
| Sulfate, Iron, free, bags c-1 wks 100 lb. | 1.90 | 1.95 | 1.90 | 1.95 | 1.90 | 1.95 | 1.90 | 2.05 |
| Coml, bags c-1 wks 100 lb. | 1.25 | 1.30 | 1.25 | 1.30 | 1.25 | 1.30 | 1.25 | 1.40 |
| Aminoazobenzene, 110 lb kegs lb. | ..... | 1.15 | ..... | 1.15 | ..... | 1.15 | 1.15 | 1.15 |
| **Ammonium** | | | | | | | | |
| Ammonia anhydrous Com. tanks | ..... | .05⅝ | ..... | .05⅝ | ..... | .05¼ | .05¼ | .05¼ |
| Ammonia, anhyd. 100 lb cyl lb. | .15½ | .15½ | .15½ | .15½ | .15½ | .15½ | .15½ | .15½ |
| Water, 26°, 800 lb dr del lb. | .02½ | .03 | .02½ | .03 | .02¾ | .03¼ | .03¼ | .03¼ |
| Ammonia, aqua 26° tanks | ..... | .02¾ | ..... | .02¾ | .02¼ | .02¼ | .02¾ | .02¾ |
| Acetate lb. | .26 | .33 | .26 | .39 | .28 | .39 | .28 | .39 |
| Bicarbonate, bbls., f.o.b. plant 100 lb. | ..... | 5.15 | ..... | 5.15 | ..... | 5.15 | 5.15 | 5.15 |
| Bifluoride, 300 lb bbls lb. | .14½ | .17 | .14½ | .22 | .21 | .22 | .21 | .22 |
| Carbonate, tech, 500 lb cs. lb. | .08 | .12 | .08 | .12 | .09 | .12 | .09 | .12 |
| Chloride, white, 100 lb. bbls wks 100 lb. | 4.50 | 5.15 | 4.45 | 5.15 | 4.45 | 5.15 | 4.45 | 5.15 |
| Gray, 250 lb bbls wks lb. | 5.25 | 5.75 | 5.25 | 5.75 | 5.25 | 5.75 | 5.25 | 5.75 |
| Lump, 500 lb cks spot lb. | .10½ | .11 | .10½ | .11½ | .11 | .11½ | .11 | .11½ |
| Lactate, 500 lb bbls lb. | .15 | .16 | .15 | .16 | .15 | .16 | .15 | .16 |
| Ammonium Linoleate lb. | ..... | .11 | .11 | .15 | .15 | ..... | ..... | ..... |
| Nitrate, tech, casks lb. | .06 | .10 | .06 | .10 | .06 | .10 | .06 | .10 |
| Persulfate, 112 lb kegs lb. | .20 | .22½ | .20 | .27½ | .25 | .30 | .26 | .30 |
| Phosphate, tech, powd, 325 lb. bbls lb. | .08½ | .11½ | .08½ | .12 | .11½ | .12 | .11½ | .13 |
| Sulfate, bulk c-1 100 lb. | ... . | 1.40 | 1.05 | 1.40 | 1.10 | 1.80 | 1.75 | 2.10 |
| Southern points 100 lb. | ..... | 1.40 | 1.05 | 1.40 | 1.25 | 1.75 | 1.82½ | 2.10 |
| Nitrate, 26% nitrogen 31.6% ammonia imported bags c.i.f. ton | 34.60 | 35.00 | 34.60 | 35.00 | 34.60 | 35.00 | 45.00 | 57.60 |
| Sulfocyanide, kegs lb. | .36 | .48 | .36 | .48 | .36 | .48 | .36 | .48 |
| Amyl Acetate, (from pentane) Tanks lb. | ..... | .157 | .157 | .17½ | .16 | .222 | .222 | .236 |
| Tech., drs lb. | .17½ | .18 | .17½ | .18 | .16½ | .236 | .225 | .24 |
| Alcohol, see Fusel Oil | | | | | | | | |
| Furoate, 1 lb tins lb. | ..... | 5.00 | ..... | 5.00 | ..... | 5.00 | 5.00 | 5.00 |
| Aniline Oil, 960 lb drs & tks lb. | .14½ | .16 | .14½ | .16 | .14½ | .16 | .15 | .16 |
| Annatto, fine lb. | .34 | .37 | .34 | .37 | .34 | .37 | .34 | .37 |
| Anthraquinone, sublimed, 125 lb. bbls lb. | ..... | .45 | .45 | .55 | .50 | .55 | .50 | .90 |
| Antimony, metal slabs, ton lots lb. | .05 | .05½ | .05 | .06½ | .06¾ | .07½ | .06½ | .09½ |
| Needle, powd, bbls lb. | .07 | .08 | .08½ | .09 | .08½ | .09 | .08 | .09½ |
| Chloride, soln (butter of) cbys lb. | .13 | .17 | .13 | .17 | .13 | .17 | .13 | .17 |
| Oxide, 500 lb bbls lb. | .07½ | .08¾ | .07½ | .08¾ | .08¾ | .08¾ | .07½ | .08¾ |
| Salt, 63% to 65%, tins lb. | .20 | .23 | .20 | .24 | .22 | .24 | .22 | .24 |
| Sulfuret, golden, bbls lb. | .16 | .20 | .16 | .20 | .16 | .20 | .16 | .20 |
| Vermillion, bbls lb. | .38 | .42 | .38 | .42 | .38 | .42 | .38 | .42 |
| Archil, conc, 600 lb bbls lb. | .20 | .21 | .17 | .21 | .17 | .19 | .17 | .19 |
| Double, 600 lb bbls lb. | .16 | .17 | .16 | .17 | .12 | .14 | .12 | .14 |
| Triple, 600 lb bbls lb. | .16 | .17 | .16 | .17 | .12 | .14 | .12 | .14 |
| Argols, 80%, casks lb. | .12½ | .13 | .12½ | .13 | ..... | .18¾ | .18¾ | .18¾ |
| Crude, 30%, casks lb. | .07 | .07½ | .07 | .07½ | .07 | .08 | .07¾ | .08 |

*Delivery Metropolitan area

# HEAVY CHEMICALS

## ALUMINUM SULPHATE

SULPHURIC ACID
GLAUBER'S SALT
SODIUM SULPHIDE
(chipped-conc.)
ANHYDROUS BISULPHITE SODA
MURIATIC ACID
(Hydrochloric Acid)
NITRE CAKE
ACETIC ACID
TRISODIUM PHOSPHATE

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# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

50,690 tons in May and 90,772 tons in June, 1931. The estimate is based upon reports received from seventy-six manufacturers operating 104 plants. June consumption in fertilizer manufacture was 29,824 tons against 30,266 tons in May and 97,981 tons in June, 1931. Stocks on hand at the end of June were 84,489 tons, against 74,930 tons in May and 96,586 tons at the end of June, 1931. Details of production, consumption in fertilizer manufacture, shipments and stocks on hand for June and for the January-June period, together with a comparison with last year, follow:—

| | †*June, 1932* | **May, 1932* |
|---|---|---|
| Production and purchases:— | | |
| Produced | 45,039 | 50,690 |
| Northern district | 39,661 | 42,457 |
| Southern district | 5,378 | 8,233 |
| Purchased from fertilizer mfr. | 2,315 | 1,954 |
| Northern district | 2,063 | 927 |
| Southern district | 252 | 1,027 |
| Purchased from non-fert. mfrs. | 13,978 | 11,974 |
| Northern district | 7,699 | 6,793 |
| Southern district | 6,279 | 5,181 |
| Consumed in fertilizer mfrs.:— | | |
| Consumed by fertilizer, totals | 29,824 | 30,266 |
| Northern district | 20,059 | 22,084 |
| Southern district | 9,765 | 8,182 |
| Shipments:— | | |
| To other than fertilizer mfrs | 17,345 | 21,009 |
| Northern district | 15,954 | 18,621 |
| Southern district | 1,391 | 2,388 |
| To fertilizer mfrs. | 4,329 | 16,177 |
| Northern district | 3,719 | 12,491 |
| Southern district | 610 | 3,686 |
| Stocks on hand, totals | 84,489 | 74,930 |
| Northern district | 62,383 | 52,692 |
| Southern district | 22,106 | 22,238 |

| | *Jan.-June 1932* | *1931* |
|---|---|---|
| Production and purchases:— | | |
| Produced | 468,295 | 806,610 |
| Northern district | 334,426 | 552,708 |
| Southern district | 133,869 | 253,902 |
| Purchased from fertilizer mfrs. | 41,370 | ..... |
| Northern district | 19,465 | ..... |
| Southern district | 21,905 | ..... |
| Purchased from non-fert. mfrs. | 76,606 | 170,348 |
| Northern district | 42,337 | 97,214 |
| Southern district | 34,269 | 73,134 |
| Consumed in fertilizer mfrs.:— | | |
| Consumed by fertilizer, totals | 355,323 | 809,903 |
| Northern district | 208,252 | 477,411 |
| Southern district | 147,071 | 332,492 |
| Shipments:— | | |
| To other than fertilizer mfrs | 136,649 | 211,580 |
| Northern district | 117,108 | 169,327 |
| Southern district | 19,541 | 42,253 |
| To fertilizer mfrs. | 104,573 | ..... |
| Northern district | 79,154 | ..... |
| Southern district | 25,419 | ..... |

*Revised.
†Preliminary.
Northern district, states north of Virginia-North Caroline line; Southern district, states south of Virginia-Carolina line.

**Acid Tartaric** — Domestic producers and importers both announced further reductions in price. The competitive position between the two remains unchanged. Italian production of tartaric acid last year is estimated by the general secretary of the National Fascist Federation of the Chemical and Allied industries to have shown a decline of approximately 20 per cent on that for 1930. This decline is attributed largely to the competition of foreign producers, and particularly to that of the Spanish makers. Of the five Italian tartaric acid factories one did not operate at all last year, and the other four had to curtail their output at some period or other during the year. In regard to

| | Current Market | | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|---|
| Aroclors, wks. | lb. | .18 | .30 | .18 | .40 | .20 | .40 | .20 | .40 |
| Arsenic, Red. 224 lb kegs, cs. | lb. | .09½ | .10 | .09½ | .10 | .09½ | .10 | .08½ | .11 |
| White, 112 lb kegs | lb. | .04 | .05 | .04 | .05 | .03¾ | .05 | .03¾ | .04¼ |
| Asbestine, c-l wks | ton | ..... | 15.00 | ..... | 15.00 | ..... | 15.00 | 15.00 | 15.00 |
| **Barium** | | | | | | | | | |
| Barium Carbonate, 200 lb bags wks | ton | 47.00 | 57.00 | 47.00 | 57.00 | 56.50 | 60.00 | 58.00 | 60.00 |
| Chlorate, 112 lb kegs NY | lb. | .13¼ | .14¼ | .13¼ | .15 | .14 | .15 | .14 | .15 |
| Chloride, 600 lb bbl wks. | ton | 63.00 | 69.00 | 63.00 | 69.00 | 63.00 | 69.00 | 63.00 | 69.00 |
| Dioxide, 88%, 690 lb drs. | lb. | .11 | .13 | .11 | .13 | .12 | .13 | .12 | .13 |
| Hydrate, 500 lb bbls. | lb. | .04¾ | .05½ | .04¾ | .05½ | .04¾ | .05½ | .04¾ | .05½ |
| Nitrate, 700 lb casks | lb. | .07 | .07½ | .07 | .08 | .07½ | .08½ | .07½ | .08½ |
| Barytes, Floated, 350 lb bbls wks | ton | 23.00 | 24.00 | 23.00 | 24.00 | 23.00 | 24.00 | 23.00 | 24.00 |
| Bauxite, bulk, mines | ton | 5.00 | 6.00 | 5.00 | 6.00 | 5.00 | 8.00 | 5.00 | 8.00 |
| Beeswax, Yellow, crude bags | lb. | .14½ | .15 | .14½ | .24 | .22 | .31 | .24 | .34 |
| Refined, cases | lb. | .20 | .21 | .20 | .28 | .25 | .37 | .37 | .38 |
| White, cases | lb. | .30 | .32 | .30 | .36 | .34 | .36 | .34 | .53 |
| Benzaldehyde, technical, 945 lb. drums wks | lb. | .60 | .65 | .60 | .65 | .60 | .65 | .60 | .65 |
| **Benzene** | | | | | | | | | |
| Benzene, 90%, Industrial, 8000 gal tanks wks | gal. | ..... | .20 | ..... | .20 | .18 | .21 | .21 | .22 |
| Ind. Pure, tanks works | gal. | ..... | .20 | ..... | .20 | .18 | .21 | .21 | .22 |
| Benzidine Base, dry, 250 lb. bbls | lb. | .65 | .67 | .65 | .67 | .65 | .67 | .65 | .74 |
| Benzoyl, Chloride, 500 lb drs | lb. | .40 | .45 | .40 | .47 | .45 | .47 | .45 | 1.00 |
| Benzyl Chloride, tech drs | lb. | ..... | .30 | ..... | .30 | ..... | .30 | .25 | .25 |
| Beta-Naphthol, 250 lb bbl wk | lb. | ..... | .22 | ..... | .22 | .22 | .24 | .22 | .24 |
| Naphthylamine, sublimed, 200 lb bbls | lb. | 1.25 | 1.35 | 1.25 | 1.35 | 1.25 | 1.35 | 1.25 | 1.35 |
| Tech, 200 lb bbls | lb. | .53 | .58 | .53 | .58 | .53 | .65 | .53 | .65 |
| Blanc Fixe, 400 lb bbls wks. | ton | 60.00 | 75.00 | 60.00 | 80.00 | 75.00 | 90.00 | 75.00 | 90.00 |
| **Bleaching Powder** | | | | | | | | | |
| Bleaching Powder, 800 lb drs c-l wks contract | 100 lb. | 1.75 | 2.00 | 1.75 | 2.00 | 1.75 | 2.35 | 2.00 | 2.35 |
| Blood, Dried, fob, NY | Unit | 1.75 | 1.80 | 1.20 | 1.90 | 1.65 | 3.00 | 3.00 | 3.90 |
| Chicago | Unit | 1.50 | 1.60 | 1.50 | 1.60 | 1.50 | 2.35 | 2.75 | 4.50 |
| S. American shipt | Unit | ..... | Nom | ..... | Nom. | 2.00 | 3.20 | 3.15 | 4.10 |
| Blues, Bronze Chinese Milori Prussian Soluble | lb. | ..... | .35 | ..... | .35 | ..... | .35 | .35 | .35 |
| Bone, raw, Chicago | ton | ..... | 22.00 | 20.00 | 22.00 | 21.00 | 32.00 | 31.00 | 39.00 |
| Bone Ash, 100 lb kegs | lb. | .06 | .07 | .06 | .07 | .06 | .07 | .06 | .07 |
| Black, 200 lb bbls | lb. | .06 | .08¼ | .05½ | .08¼ | .05½ | .08¼ | .05½ | .08¼ |
| Meal, 3% & 50%, Imp. | ton | ..... | 23.00 | 21.00 | 23.00 | 21.00 | 31.00 | 31.00 | 31.00 |
| Borax, bags | lb. | .018 | .02 | .018 | .03¼ | .02½ | .03¼ | .02½ | .03¼ |
| Bordeaux, Mixture, 16% pwd. | lb. | .11½ | .13 | .11½ | .13 | .11½ | .13 | .12 | .14 |
| Paste, bbls | lb. | .11½ | .13 | .11½ | .13 | .11½ | .13 | .12 | .14 |
| Brazilwood, sticks, shpmt | lb. | 26.00 | 28.00 | 26.00 | 28.00 | 26.00 | 28.00 | 26.00 | 28.00 |
| Bromine, cases | lb. | .36 | .43 | .36 | .43 | .36 | .43 | .38 | .47 |
| Bronze, Aluminum, powd blk. | lb. | .60 | 1.20 | .60 | 1.20 | .60 | 1.20 | .60 | 1.20 |
| Gold bulk | lb. | .55 | 1.25 | .55 | 1.25 | .55 | 1.25 | .55 | 1.25 |
| Butanes, com 16.32° group 3 tanks | lb. | ..... | .04 | ..... | ..... | ..... | ..... | ..... | ..... |
| Butyl, Acetate, normal drs. | lb. | .134 | .139 | .134 | .166 | .161 | .175 | .17 | .20 |
| Tank, wks. | lb. | ..... | .124 | .124 | .143 | .143 | .175 | .16 | .186 |
| Aldehyde, 50 gal drs wks. | lb. | .31½ | .36 | .31½ | .36 | .34 | .44 | .34 | .44 |
| Carbitol see Diethylene Glycol Mono (Butyl Ether) | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cellosolve (see Ethylene glycol mono butyl ether) | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Furoate, tech., 50 gal. dr. | lb. | ..... | .50 | ..... | .50 | ..... | .50 | .50 | .50 |
| Propionate, drs | lb. | .20 | .22 | .20 | .25 | .22 | .25 | .22 | .27 |
| Stearate, 50 gal drs. | lb. | .25 | .25½ | .25 | .25½ | .25 | .30 | .25 | .30 |
| Tartrate, drs | lb. | .55 | .60 | .55 | .60 | .55 | .60 | .55 | .60 |
| Cadmium, Sulfide, boxes | lb. | .65 | .90 | .65 | .90 | .65 | .90 | .90 | 1.75 |
| **Calcium** | | | | | | | | | |
| Calcium, Acetate, 150 lb bags c-l | 100 lb. | ..... | 2.50 | 2.00 | 2.50 | ..... | 2.00 | 2.00 | 4.50 |
| Arsenate, 100 lb bbls c-l wks | lb. | .05½ | .06 | .05½ | .06 | .06 | .09 | .07 | .09 |
| Carbide, drs | lb. | .05 | .06 | .05 | .06 | .05 | .06 | .05 | .06 |
| Carbonate, tech, 100 lb bags c-l | lb. | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Chloride, Flake, 375 lb drs c-l wks | ton | ..... | 21.00 | ..... | 21.00 | 21.00 | 22.75 | 22.75 | 22.75 |
| Solid, 650 lb drs c-l fob wks | ton | ..... | 18.00 | ..... | 18.00 | 18.00 | 20.00 | 20.00 | 20.00 |
| Nitrate, 100 lb bags | ton | 34.00 | 35.00 | 34.00 | 35.00 | 34.00 | 43.00 | 40.00 | 43.00 |
| Peroxide, 100 lb drs | lb. | ..... | 1.25 | ..... | 1.25 | ..... | 1.25 | 1.25 | 1.25 |
| Phosphate, tech, 450 lb bbls. | lb. | .07½ | .08 | .07½ | .08¾ | .08 | .08¾ | .08 | .08¾ |
| Stearate, 100 lb. bbls | lb. | .16 | .17 | .16 | .18 | .17 | .22 | .19 | .26 |
| Calurea, bags S. points c.i.f. | ton | ..... | 88.65 | ..... | 88.65 | ..... | 88.65 | 88.65 | 88.65 |
| Camwood, Bark, ground bbls. | lb. | .16 | .18 | .16 | .18 | ..... | .18 | .18 | .18 |
| Candelilla Wax, bags | lb. | .10 | .11 | .10 | .14 | .13 | .15 | .15 | .20 |
| Carbitol, (See Diethylene Glycol Mono Ethyl Ether) | | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Carbon, Decolorizing, 40 lb bags c-l | lb. | .08 | .15 | .08 | .15 | .08 | .15 | .08 | .15 |
| Black, 100-300 lb cases lc-l NY | lb. | .06 | .12 | .06 | .12 | .06 | .12 | .06 | .12 |
| Bisulfide, 500 lb drs lc-l NY | lb. | .05½ | .06 | .05½ | .06 | .05½ | .06 | .05½ | .06 |
| Dioxide, Liq. 20-25 lb cyl. | lb. | ..... | .06 | ..... | .06 | ..... | .06 | .06 | .18 |
| Tetrachloride, 1400 lb drs delivered | lb. | .06½ | .07 | .06¼ | .07 | .06¼ | .07 | .06¼ | .07 |
| Carnauba Wax, Flor, bags | lb. | .25 | .26 | .25 | .28 | .26 | .28 | .28 | .37 |
| No. 1 Yellow, bags | lb. | .21 | .22 | .21 | .24 | .23 | .40 | .25 | .33 |
| No. 2 N Country, bags | lb. | .15 | .16 | .13 | .16 | .15 | .23 | .20 | .27 |
| No. 2 Regular, bags | lb. | .20 | .21½ | .20 | .22 | .21 | .23 | .23 | .30 |
| No. 3 N. C. | lb. | .12 | .12½ | .11 | .12 | .11 | .11 | .16 | .23 |
| No. 3 Chalky | lb. | .12 | .12½ | .11 | .12 | .11 | .13½ | .16 | .23 |
| Casein, Standard, Domestic ground | lb. | ..... | .06 | .04¼ | .07½ | .06 | .10 | .09½ | .15½ |

# Bichromate of Soda
# Bichromate of Potash
# Chromic Acid
# Oxalic Acid

*"Mutualize Your Chrome Department"*

MUTUAL CHEMICAL CO. OF AMERICA
270 Madison Avenue
New York, N. Y.

**Factories at Baltimore and Jersey City** **Mines in New Caledonia**

tartaric acid itself, the actual Italian output figures last year was 4,000 tons after the 4,800 tons of 1930 and the 6,100 tons of 1929. In cream of tartar, the output last year—namely, 1,400 tons—was practically the same as that for 1930, but compares with the 1,700 tons of 1929 and the 1,870 tons of 1929.

**Alcohol** — Production of ethyl alcohol was off about seven per cent in the first six months of 1932 when compared with 1931. Stocks of denatured at denaturing plants were down approximately 30 per cent in the same period. With stocks in a favorable position, producers were able to hold to schedule prices. Output in the next 60 days will be speeded up to care for the anti-freeze business. Quotations for alcohol to be delivered during the period Sept. 1 to Dec. 31 are as follows:

| | *Cents per gallon* |
|---|---|
| C. D. No. 5, drums, car lots | 38.5 |
| 5 to 19 drums | 44.5 |
| 1 to 4 drums | 46.5 |
| S. D. No. 1, tanks | 30.4 |
| drums, car lots | 34.6 |
| 5 to 19 drums | 40.6 |
| 20 drums | 36.6 |
| 1 to 4 drums | 42.6 |
| barrels, car lots | 37.6 |
| 5 to 19 barrels | 43.6 |
| 1 to 4 barrels | 45.6 |

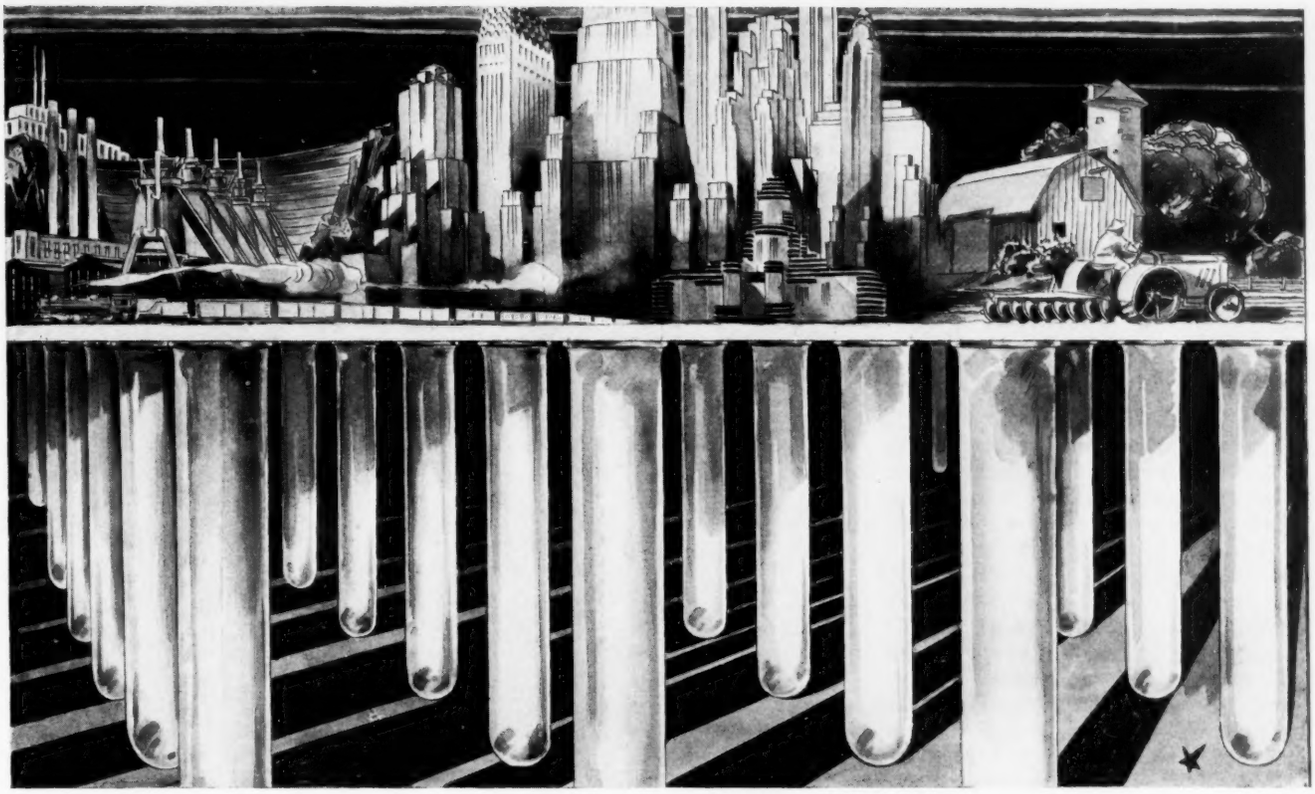
Credit of 1c. per gallon on 3 car lots or more.

**Aluminum Sulfate** — An improved tone in the paper industry in the past month was largely responsible for an increase in alum tonnages. Further gains are confidently looked for in the next 60 days. Production of all grades of paper in the U. S. in the first six months of 1932 amounted to 2,364,113 tons compared with 2,705,664 tons in the first six months of 1931, a reduction of 13 per cent, according to the American Pulp & Paper Association. Inventories at the end of June were 264,259 tons compared with 272,298 tons on June 30, 1931, a reduction of three per cent. Shipments for water purification purposes were also in better volume.

**Ammonia Anhydrous** — Contract withdrawals were fair for this time of the year, but were below last season. Prices were firm and unchanged on spot orders.

**Ammonium Sulfate** — Both domestic producers and importers raised quotations during the month. The Treasury Department's findings on the alleged dumping of material was largely responsible for this action. One or two importers to date have been assessed $10 a ton with the result that the market is confused and quoted levels at the moment are nominal. Very little material is changing hands, both producers and consumers are waiting until the situation clarifies somewhat. Ammonium sulfate imports into the U. S. attained a peak record in the first six

| | | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|---|
| Cellosolve (see Ethylene glycol mono ethyl ether) | | | | | | | | |
| Acetate (see Ethylene glycol mono ethyl ether acetate) | | | | | | | | |
| Celluloid, Scraps, Ivory cs | lb. | .13 | .13 | .15 | .13 | .15 | .20 | .20 |
| Shell, cases | lb. | .18 | .18 | .20 | .18 | .20 | .18 | .20 |
| Transparent, cases | lb. | ..... | ..... | .15 | ..... | .15 | .15 | .15 |
| Cellulose, Acetate, 50 lb kegs | lb. | .80 | .80 | .90 | .80 | 1.25 | .80 | 1.25 |
| Chalk, dropped, 175 lb bbls | lb. | .03 | .03 | .03¾ | .03 | .03¾ | .03 | .03¾ |
| Precip, heavy, 560 lb cks | lb. | .02 | .03½ | .02 | .03½ | .02 | .03½ | .02 | .03½ |
| Light, 250 lb casks | lb. | .02⅞ | .03½ | .02¼ | .03½ | .02¼ | .03½ | .02¼ | .03½ |
| Charcoal, Hardwood, lump, bulk wks | bu. | .18 | .19 | .18 | .19 | .18 | .19 | .18 | .19 |
| Willow, powd, 100 lb bbl, wks | lb. | .06 | .06¼ | .06 | .06¼ | .06 | .06¼ | .06 | .06¼ |
| Wood, powd, 100 lb bbls | lb. | .04 | .05 | .04 | .05 | .04 | .05 | 04 | .05 |
| Chestnut, clarified bbls wks | lb. | .01½ | .02 | .01½ | .02 | .01½ | .03 | .02½ | .03 |
| 25% tks wks | lb. | .01½ | .02½ | .01¾ | .02½ | .01¾ | .02½ | .01¾ | .02½ |
| Powd, 60%, 100 lb bgs wks | lb. | ..... | .04¾ | ..... | .04⅞ | ..... | .04¼ | .04¼ | .04¼ |
| Powd, decolorized bgs wks | lb. | .04⅞ | .05 | .04⅞ | .06 | .05½ | .06 | .05½ | .06 |
| China Clay, lump, blk mines | ton | 8.00 | 9.00 | 8.00 | 9.00 | 8.00 | 9.00 | 8.00 | 9.00 |
| Powdered, bbls | lb. | .01 | .02 | .01 | .02 | .01¼ | .02 | .01¼ | .02 |
| Pulverized, bbls wks | ton | 10.00 | 12.00 | 10.00 | 12.00 | 10.00 | 12.00 | 10.00 | 12.00 |
| Imported, lump, bulk | ton | 15.00 | 25.00 | 15.00 | 25.00 | 15.00 | 25.00 | 15.00 | 25.00 |
| **Chlorine** | | | | | | | | |
| Chlorine, cyls 1c-1 wks contract | lb. | .07 | .08½ | .07 | .08½ | .07 | .08½ | .07 | .08½ |
| cyls, cl wks., contract | lb. | .04 | .04½ | .04 | .04½ | .04 | .04½ | .04 | .04½ |
| Liq tank or multi-car lot cyls wks contract | 100 lb. | 1.55 | 1.75 | 1.55 | 1.75 | 1.75 | 1.80 | 1.75 | 2.50 |
| Chlorobenzene, Mono, 100 lb. drs 1c-1 wks | lb. | .06 | .07½ | .06 | .10½ | .10 | .10½ | .10 | .10½ |
| Chloroform, tech, 1000 lb drs | lb. | .15 | .16 | .15 | .16 | .15 | .16 | .15 | .16 |
| Chloropicrin, comml cyls | lb. | 1.00 | 1.35 | 1.00 | 1.35 | 1.00 | 1.35 | 1.00 | 1.35 |
| Chrome, Green, CP | lb. | .28 | .29 | .28 | .29 | .26 | .29 | .26 | .29 |
| Commercial | lb. | .06½ | .10 | .06½ | .11 | .06½ | .11 | .06¼ | .11 |
| Yellow | lb. | .15 | .16 | .15 | .18 | .16 | .18 | .16 | .18 |
| Chromium, Acetate, 8% Chrome bbls | lb. | .04½ | .05½ | .04¾ | .05½ | .04¾ | .05½ | .04¾ | .05¾ |
| 20° soln, 400 lb bbls | lb. | ..... | .05½ | ..... | .05½ | ..... | .05½ | .05 | .05½ |
| Fluoride, powd, 400 lb bbl | lb. | .27 | .28 | .27 | .28 | .27 | .28 | .27 | .28 |
| Oxide, green, bbls | lb. | .28 | .33 | .28 | .35½ | .34½ | .35½ | .34¼ | .35½ |
| Coal tar, bbls | bbl. | 10.00 | 10.50 | 10.00 | 10.50 | 10.00 | 10.50 | 10.00 | 10.50 |
| Cobalt Oxide, black, bags | lb. | 1.25 | 1.35 | 1.25 | 1.45 | 1.35 | 2.22 | 2.10 | 2.22 |
| Cochineal, gray or black bag | lb. | .45 | .49 | .52 | .57 | .52 | .57 | .52 | 1.01 |
| Teneriffe silver, bags | lb. | .46 | .49 | .46 | .57 | .55 | .57 | .54 | .95 |
| **Copper** | | | | | | | | |
| Copper, metal, electrol | 100 lb. | 5.32 | 5.20 | 5.32 | 7.25 | 6.25 | 10.36 | 9.50 | 17.78 |
| Carbonate, 400 lb bbls | lb. | .07 | .15½ | .07 | .16½ | .08½ | .16½ | .08¾ | .21½ |
| Chloride, 250 lb bbls | lb. | .17 | .18 | .17 | .25 | .22 | .25 | .22 | .28 |
| Cyanide, 100 lb drs | lb. | .39 | .40 | .39 | .40 | .39 | .42 | .41 | .45 |
| Oxide, red, 100 lb bbls | lb. | .15 | .16 | .15 | .16 | .15 | .18 | .15½ | .32 |
| Sub-acetate verdigris, 400 lb bbls | lb. | .18 | .19 | .18 | .19 | .18 | .19 | .18 | .19 |
| Sulfate, bbls c-l wks | 100 lb. | ..... | 2.75 | 2.75 | 3.10 | 3.10 | 4.95 | 3.95 | 5.50 |
| Copperas, crys and sugar bulk c-l wks bags | ton | 14.00 | 14.50 | 14.00 | 14.50 | 13.00 | 14.00 | 13.00 | 14.00 |
| Cotton, Soluble, wet, 100 lb bbls | lb. | .40 | .42 | .40 | .42 | .40 | .42 | .40 | .42 |
| Cottonseed, S. E. bulk c-l | ton | ..... | 26.50 | ..... | 26.50 | ..... | 26.50 | ..... | ..... |
| Meal S. E. bulk | ton | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 7% Amm., bags mills | ton | 13.25 | 38.00 | 13.25 | 38.00 | 13.25 | 38.00 | 37.50 | 38.00 |
| Cream Tartar, USP, 300 lb. bbls | lb. | .17 | .17½ | .17 | .20¼ | .20¼ | .24½ | .24½ | .27 |
| Creosote, USP, 42 lb cbys | lb. | .40 | .42 | .40 | .42 | .40 | .42 | .40 | .42 |
| Oil, Grade 1 tanks | gal. | .11 | .12 | .11 | 12½ | .11¼ | .14 | .15 | .16 |
| Grade 2 | gal. | .10 | .11 | .10 | .11½ | .10½ | .12 | .13 | .14 |
| Grade 3 | gal. | .09 | .11 | .09 | .11½ | .10½ | .12 | .13 | .14 |
| Cresol, USP, drums | lb. | .10½ | .11 | .10½ | .11 | .10½ | .17 | .14 | .17 |
| Crotonaldehyde, 50 gal dr | lb. | .32 | .36 | .32 | .36 | .32 | .36 | .32 | .36 |
| Cudbear, English | lb. | .16 | .17 | .16 | .17 | .16 | .17 | .16 | .17 |
| Cutch, Rangoon, 100 lb bales | lb. | .08½ | .09 | .08¼ | .12 | .10 | .13 | .11 | .13 |
| Borneo, Solid, 100 lb bale | lb. | .05 | 06 | .05 | .07 | .05½ | .08½ | .06½ | .08½ |
| Cyanamide, bags c-l frt allowed Ammonia unit | | ..... | .97½ | ..... | .97½ | .97½ | ..... | ..... | ..... |
| Dextrin, corn, 140 lb bags | 100 lb. | 3.24 | 3.45 | 3.24 | 3.67 | 3.47 | 4.02 | 4.42 | 4.82 |
| White, 140 lb bags | 100 lb. | 3.19 | 3.37 | 3.19 | 3.37 | 3.37 | 4.02 | 4.17 | 4.77 |
| Potato Yellow, 220 lb bgs | lb. | .08 | .09 | .08 | .09 | .08 | .09 | .08 | .09 |
| White, 220 lb bags 1c-1 | lb. | .08 | .09 | .08 | .09 | .08 | .09 | .08 | .09 |
| Tapioca, 200 lb bags 1c-1 | lb. | .07 | .08 | .07 | .08¾ | .08½ | .08¾ | .08 | .08½ |
| Diamylphthalate, drs wks | gal. | ..... | 3.80 | ..... | 3.80 | ..... | 3.80 | 3.80 | 3.80 |
| Dianisidine, barrels | lb. | 2.35 | 2.70 | 2.35 | 2.70 | 2.35 | 2.70 | 2.35 | 2.70 |
| Dibutylphthalate, wks | lb. | .218 | .22 | .218 | .23½ | .228 | .28 | .24½ | .28 |
| Dibutyltartrate, 50 gal drs | lb. | .29½ | .31½ | .29½ | .31½ | .29½ | .31½ | .29½ | .31½ |
| Dichloroethylether, 50 gal drs | lb. | ..... | .06 | ..... | .06 | ..... | .06 | .05 | .07 |
| Dichloromethane, drs wks | lb. | .55 | .65 | .55 | .65 | .55 | .65 | .55 | .65 |
| Diethylamine, 400 lb drs | lb. | 2.75 | 3.00 | 2.75 | 3.00 | 2.75 | 3.00 | 2.75 | 3.00 |
| Diethylcarbonate, drs | gal. | 1.85 | 1.90 | 1.85 | 1.90 | 1.85 | 1.90 | 1.85 | 1.90 |
| Diethylaniline, 850 lb drs | lb. | .55 | .60 | .55 | .60 | .55 | .60 | .55 | .60 |
| Diethyleneglycol, drs | lb. | .14 | .16 | .14 | .16 | .14 | .16 | .10 | .13 |
| Mono ethyl ether, drs | lb. | .15 | .16 | .15 | .16 | .15 | .16 | .13 | .16 |
| Mono butyl ether, drs | lb. | .24 | .30 | .24 | .30 | .24 | .30 | .24 | .30 |
| Diethylene oxide, 50 gal drs | lb. | .26 | .27 | ..... | ..... | ..... | ..... | ..... | ..... |
| Diethylorthotoluidin, drs | lb. | .64 | .67 | .64 | .67 | .64 | .67 | .64 | .67 |
| Diethyl phthalate, 1000 lb. drums | lb. | .23 | .26 | .23 | .26 | .23 | .26 | .24 | .26 |
| Diethylsulfate, technical, 50 gal drums | lb. | ... | ... | .30 | .35 | .30 | .35 | .30 | .35 |
| Dimethylamine, 400 lb drs | lb. | ..... | 2.62 | ..... | 2.62 | ..... | 2.62 | 2.62 | 2.62 |
| Dimethylaniline, 340 lb drs | lb. | .25 | .27 | .25 | .27 | .25 | .28 | .26 | .28 |



# FOUNDATION FOR THE NEW PROSPERITY

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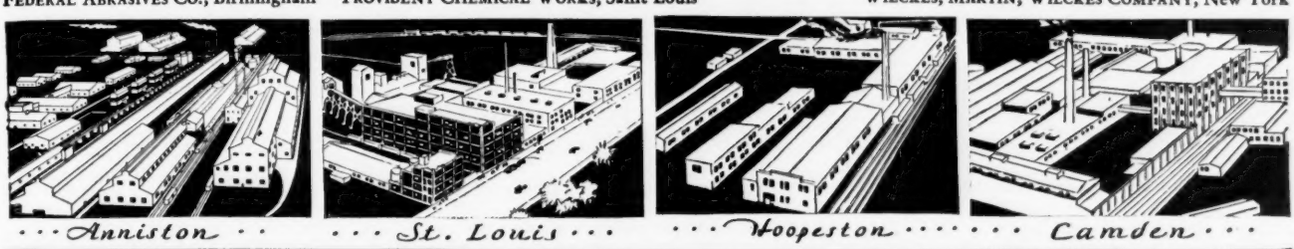

# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

months of 1932, the total reported having reached 165,441 long tons with a declared value of $3,208,771. While Netherlands was reported as the source of 65 per cent of the United States imports, it is possible that receipts included material originating in other countries and transshipped through Dutch ports. Belgium accounted for 20 per cent of the trade.

**Benzol** — Consumers continued to hold shipments to very low levels, but prices were firm and unchanged. The sharply decreasing exports of American benzol fell at an accelerated rate during the first half of 1932, according to preliminary figures, shipments dropping to 1,578,567 gallons ($322,028), compared to 10,511,570 gallons ($1,911,729) in the first six months of 1931, and 27,002,613 gallons ($6,089,728) in the same period of 1930. American benzol went to sixteen foreign markets in 1932 and twenty-one in 1931.

**Calcium Chloride** — Shipments for dust laying purposes declined sharply in the last half of the month, but producers reported satisfactory business in the refrigeration line. Prices were unchanged.

**Chlorine** — Price competition suddenly developed in the chlorine market when producers started soliciting contract renewals. Suppliers first named for contracts the 1932 price of $1.75 per hundred pounds in tank cars, but this was soon shaded to $1.65. Later, further concessions were made where large tonnages were involved and the price declined to $1.55. A majority of the 1933 contracts appeared to have been written up previous to the Labor Day holiday and the price was firm at the $1.55 figure, with very little change in this year's established customer-seller relationships.

**Coal Tar Chemicals** — The continued curtailment in by-product coke operations maintained the market for coal tar products at firm levels, although the demands from the trade were spotty. Toluene and solvent naphtha shipments were about equal to July. Several of the coal tar acids and intermediates were in better demand based upon an improvement in the call for dyestuffs for the textile industry. Coking coal charged in by-product ovens in July amounted to 2,198,100 tons as compared with 2,220,100 tons in June and 3,688,500 tons in July a year ago. Light oil production in July totaled 6,766,186 gallons as against 6,793,506 gallons in the preceding month and 11,286,810 gallons in July last year. Estimated from production of coke at by-product ovens known to recover benzol, the total in July

| | Current Market | | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|---|
| Dimethylsulfate, 100 lb drs. . lb. | .45 | .50 | .45 | .50 | .45 | .50 | .45 | .50 |
| Dinitrobenzene, 400 lb bbls. . lb. | .15 | .16 | .15 | .16 | .15 | .16½ | .15½ | .16½ |
| Dintrochlorobenzene, 400 lb bbls . . . . . lb. | .13 | .15 | .13 | .15 | .13 | .15 | .13 | .15 |
| Dinitronaphthalene, 350 lb bbls . . . . . lb. | .34 | .37 | .34 | .37 | .34 | .37 | .34 | .37 |
| Dinitrophenol, 350 lb bbls. . . . lb. | .23 | .24 | .23 | .24 | .29 | .30 | .31 | .32 |
| Dinitrotoluene, 300 lb bbls. . . . lb. | .16 | .17 | .16 | .17 | .16 | .17 | .16 | .18 |
| Diorthotolyguanidine, 275 lb bbls wks . . . . . lb. | .42 | .46 | .42 | .46 | .42 | .46 | .42 | .46 |
| Dioxan (See Diethylene Oxide) . . | . . . . | . . . . | . . . . | . . . . | . . . . | . . . . | . . . . | . . . . |
| Diphenyl . . . . . lb. | .20 | .40 | .20 | .40 | .20 | .40 | .20 | .50 |
| Diphenylamine . . . . . lb. | .34 | .37 | .34 | .37 | .37 | .38 | .38 | .40 |
| Diphenylguanidine, 100 lb bbl lb. | .30 | .35 | .30 | .35 | .30 | .35 | .30 | .35 |
| Dip Oil, 25%, drums . . . . . lb. | .26 | .30 | .26 | .30 | .26 | .30 | .26 | .30 |
| Divi Divi pods, bgs shipmt. . ton | . . . . | 27.00 | 26.00 | 30.00 | 28.00 | 35.00 | 35.00 | 46.50 |
| Extract . . . . . lb. | .05 | .05½ | .05 | .05½ | .05 | .05½ | .05 | .05½ |
| Egg Yolk, 200 lb cases . . . . . lb. | .40 | .41 | .40 | .52 | .45 | .58 | .72 | .80 |
| Epsom Salt, tech, 300 lb bbls c-1 NY . . . . . 100 lb. | 1.70 | 1.90 | 1.70 | 1.90 | 1.70 | 1.90 | 1.70 | 1.90 |
| Ether, USP anaesthesia 55 lb. drs. . . . . lb. | .22 | .23 | .22 | .23 | .23 | .28 | .21 | .28 |
| USP (Conc) . . . . . lb. | .09 | .10 | .09 | .10 | .09 | .10 | . . . . | . . . . |
| Ethyl Acetate, 85% Ester, tanks . . . . . lb. | . . . . | .09 | . . . . | .09 | .06½ | .09 | .085 | .115 |
| drums . . . . . lb. | . . . . | .10 | . . . . | .10 | .08 | .10 | .094 | .158 |
| Anhydrous, tanks . . . . . lb. | . . . . | .10 | . . . . | .10 | .075 | .119 | .119 | .142 |
| drums . . . . . lb. | . . . . | .10½ | . . . . | .10½ | .085 | .121 | .115 | .156 |
| Acetoacetate, 50 gal drs. . . lb. | .65 | .68 | .65 | .68 | .65 | .68 | .65 | .68 |
| Benzylaniline, 300 lb drs. . . lb. | .88 | .90 | .88 | .90 | .88 | .90 | .88 | 1.11 |
| Bromide, tech, drums . . . . . lb. | .50 | .55 | .50 | .55 | .50 | .55 | .50 | .55 |
| Carbonate, 90%, 50 gal drs gal. | 1.85 | 1.90 | 1.85 | 1.90 | 1.85 | 1.90 | 1.85 | 1.90 |
| Chloride, 200 lb drums. . . . . lb. | . . . . | .22 | . . . . | .22 | . . . . | .22 | .22 | .22 |
| Chlorocarbonate, cbys . . . . . lb. | . . . . | .30 | . . . . | .30 | . . . . | .30 | .30 | .40 |
| Ether, Absolute, 50 gal drs . lb. | .50 | .52 | .50 | .52 | .50 | .52 | .50 | .52 |
| Furoate, 1 lb tins . . . . . lb. | . . . . | 5.00 | . . . . | 5.00 | . . . . | 5.00 | 5.00 | 5.00 |
| Lactate, drums works . . . lb. | .25 | .29 | .25 | .29 | .25 | .29 | .25 | .29 |
| Methyl Ketone, 50 gal drs. . lb. | . . . . | .30 | . . . . | .30 | . . . . | .30 | .30 | .30 |
| Oxalate, drums works. . . . . lb. | .37½ | .55 | .37½ | .55 | .45 | .55 | .45 | .55 |
| Oxybutyrate, 50 gal drs wks lb. | . . . . | .30½ | . . . . | .30½ | . . . . | .30½ | .30½ | .30½ |
| Ethylene Dibromide, 60 lb dr. . lb. | .65 | .70 | .65 | .70 | . . . . | .70 | .70 | .70 |
| Chlorhydrin, 40%, 10 gal cbys. chloro, cont . . . . . lb. | .75 | .85 | .75 | .85 | .75 | .85 | .75 | .85 |
| Dichloride, 50 gal drums . . . . lb. | .05 | .07 | .05 | .07 | .05 | .07 | .05 | .07 |
| Glycol, 50 gal drs wks . . . . . lb. | .25 | .28 | .25 | .28 | .25 | .28 | .25 | .28 |
| Mono Butyl Ether drs wks. | . . . . | .24 | . . . . | .24 | .24 | .27 | .23 | .27 |
| Mono Ethyl Ether drs wks | .17 | .20 | .17 | .20 | .17 | .20 | .16 | .20 |
| Mono Ethyl Ether Acetate dr. wks . . . . . | .19½ | .23 | .19½ | .23 | .19½ | .23 | .19 | .23 |
| Mono Methyl Ether, drs. . lb. | .21 | .23 | .21 | .23 | .21 | .23 | .19 | .23 |
| Stearate . . . . . | .18 | .18 | .18 | .18 | .18 | .18 | . . . . | . . . . |
| Oxide, cyl . . . . . lb. | . . . . | 2.00 | . . . . | 2.00 | . . . . | 2.00 | 2.00 | 2.00 |
| Ethylidenaniline . . . . . lb. | .45 | .47½ | .45 | .47½ | .45 | .47½ | .45 | .47½ |
| Feldspar, bulk . . . . . ton | 15.00 | 20.00 | 15.00 | 20.00 | 15.00 | 20.00 | 15.00 | 25.00 |
| Powdered, bulk works. . . . ton | 15.00 | 21.00 | 15.00 | 21.00 | 15.00 | 21.00 | 15.00 | 21.00 |
| Ferric Chloride, tech, crystal 475 lb bbls . . . . . lb. | .04½ | .07 | .04½ | .07½ | .05 | .07½ | .07½ | .08 |
| Fish Scrap, dried, wks . . . . . unit | . . . . | 1.60&10 | 1.60&10 | 3.00&10 | 3.00&10 | 4.25&10 | 3.90&10 | 4.35&10 |
| Acid, Bulk 7 & 3½% delivered Norfolk & Balt. basis. . . unit | . . . . | 1.50&50 | 1.50&50 | 2.40&50 | . . . . | 2.40&50 | 3.20&50 | 3.50&50 |
| Fluorspar, 98%, bags . . . . . | 35.00 | 38.50 | 35.00 | 46.00 | 41.00 | 46.00 | 41.00 | 46.00 |
| **Formaldehyde** | | | | | | | | |
| Formaldehyde, aniline, 100 lb. drums . . . . . lb. | .37½ | .42 | .37½ | .42 | .37½ | .42 | .37½ | .42 |
| USP, 400 lb bbls wks . . . . . lb. | .06 | .07¾ | .06 | .07¾ | .06 | .07¾ | .06 | .08 |
| Fossil Flour . . . . . lb. | .02½ | .04 | .02½ | .04 | .02½ | .04 | .02½ | .04 |
| Fullers Earth, bulk, mines. . . ton | 15.00 | 20.00 | 15.00 | 20.00 | 15.00 | 20.00 | 15.00 | 20.00 |
| Imp. powd c-1 bags. . . . . ton | 24.00 | 30.00 | 24.00 | 30.00 | 24.00 | 30.00 | 24.00 | 30.00 |
| Furfural (tech.) drums wks, . . lb. | . . . . | .10 | . . . . | .10 | . . . . | .10 | .10 | .15 |
| Furfuramide (tech) 100 lb dr. . lb. | . . . . | .30 | . . . . | .30 | . . . . | .30 | .30 | .30 |
| Furfuryl Acetate, 1 lb tins. . . . lb. | . . . . | 5.00 | . . . . | 5.00 | . . . . | 5.00 | 5.00 | 5.00 |
| Alcohol, (tech) 100 lb dr . . . lb. | . . . . | .50 | . . . . | .50 | . . . . | .50 | .50 | .50 |
| Furoic Acid (tech) 100 lb dr. . lb. | . . . . | .50 | . . . . | .50 | . . . . | .50 | .50 | .50 |
| Fusel Oil, 10% impurities. . . gal. | 1.25 | 1.35 | 1.25 | 1.35 | . . . . | 1.35 | 1.35 | 1.35 |
| Fustic, chips . . . . . lb. | .04 | .05 | .04 | .05 | .04 | .05 | .04 | .05 |
| Crystals, 100 lb boxes . . . . . lb. | .18 | .20 | .18 | .20 | .18 | .22 | .20 | .22 |
| Liquid 50°, 600 lb bbls. . . . . lb. | .07 | .08 | .07 | .08 | .07 | .10 | .09 | .10 |
| Solid, 50 lb boxes . . . . . lb. | .14 | .16 | .14 | .16 | .14 | .16 | .14 | .16 |
| Sticks . . . . . ton | 25.00 | 26.00 | 25.00 | 26.00 | 25.00 | 26.00 | 25.00 | 26.00 |
| G Salt paste, 360 lb bbls. . . . . lb. | .42 | .43 | .42 | .50 | .45 | .50 | .45 | .50 |
| Gall Extract . . . . . lb. | .18 | .20 | .18 | .20 | .18 | .20 | .18 | .20 |
| Gambier, common 200 lb cs. . lb. | .06½ | .07 | .06½ | .07 | .06½ | .07 | .06 | .07 |
| 25% liquid, 450 lb bbls . . . lb. | .08 | .10 | .08 | .10 | .08 | .10 | .08 | .10 |
| Singapore cubes, 150 lb bg . lb. | .07¼ | .08 | .07¾ | .09 | .09½ | .09 | .08¾ | .09 |
| Gelatin, tech, 100 lb cases. . . . lb. | .45 | .50 | .45 | .50 | .45 | .50 | .45 | .50 |
| Glauber's Salt, tech, c-1 wks. . . . . 100 lb. | 1.00 | 1.70 | 1.00 | 1.70 | 1.00 | 1.70 | 1.00 | 1.70 |
| Glucose (grape sugar) dry 70-80° bags c-1 NY . . . . . 100 lb. | 3.24 | 3.34 | 3.24 | 3.34 | 3.24 | 3.34 | 3.24 | 3.34 |
| Tanner's Special, 100 lb bags . . . . . 100 lb. | . . . . | 3.14 | . . . . | 3.14 | . . . . | 3.14 | 3.14 | 3.14 |
| Glue, medium white, bbls. . . . lb. | .15½ | .20 | .15½ | .20 | .16 | .24 | .20 | .24 |
| Pure white, bbls . . . . . lb. | .18 | .20 | .18 | .27 | .20 | .26 | .22 | .26 |
| Glycerin, CP, 550 lb drs . . . . lb. | .09¾ | .10 | .09¾ | .11½ | .11½ | .14½ | .12½ | .14½ |
| Dynamite, 100 lb drs. . . . . lb. | .07¼ | .07½ | .07¼ | .09¾ | .09 | .12½ | .11 | .12½ |
| Saponification, tanks . . . . . lb. | .04½ | .04¾ | .04½ | .06¼ | .06 | .07½ | .07½ | .08 |
| Soap Lye, tanks . . . . . lb. | .04 | .04¼ | .03¾ | .05 | .04¼ | .07 | .06¾ | .07½ |
| Graphite, crude, 220 lb bgs. . ton | 12.00 | 23.00 | 12.00 | 35.00 | 15.00 | 35.00 | 15.00 | 35.00 |
| Flake, 500 lb bbls . . . . . lb. | .05 | .06 | .05 | .09 | .06 | .09 | .06 | .09 |
| **Gums** | | | | | | | | |
| Gum Accroides, Red, coarse and fine 140-150 lb bags . . . . . lb. | .03¼ | .04½ | .03¾ | .04½ | .03¾ | .04½ | .03¾ | .04½ |
| Powd, 150 lb bags . . . . . lb. | .06 | .06½ | .06 | .06½ | .06 | .06½ | .06 | .06½ |

# *SOFT . . .*

## *before and after waterproofing!*

Textile fabrics treated with our

**ACETATE OF ALUMINA S-228 C**

**and**

**WATERPROOFING COMPOUND S-441 A**

retain their soft, full handle after the waterproofing treatment.

These two products when added to the bath form a stable, water-resistant emulsion. The fabric is made waterproof by immersing in this one bath—a new efficient substitute for the old waterproofing treatment requiring two operations.

Tell us the kind of material which you are processing and we shall send you samples and specific directions for waterproofing.

**"A CHEMICAL PRODUCT FOR EVERY PURPOSE"**

# JACQUES WOLF & CO.

**Manufacturing Chemists and Importers,**

**PASSAIC, NEW JERSEY**

**WAREHOUSES**

PROVIDENCE, R. I.
UTICA, N. Y.
PHILADELPHIA, PA.
GREENVILLE, S. C.
CHICAGO, ILL.
CHATTANOOGA, TENN.

# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

amounted to 3,349,000 gallons as against 3,418,000 gallons in the previous month and 6,069,000 gallons in July, 1931. Output of tar was 20,222,520 gallons as compared with 20,424,920 gallons in June and 31,933,200 gallons in July last year. Amount of ammonium sulfate or its equivalent recovered in July was 25,799 tons as against 26,052 tons in June and 43,284 tons in July a year ago.

**Copperas** — The continued curtailment of steel operations at around 14 per cent has held stocks down to a minimum.

**Copper Sulfate** — Demand was limited largely to tonnages for industrial purposes. Shipments were reported to have been in fair volume for this time of the year. The strengthening in copper prices has not as yet effected the sulfate market.

**Dyestuffs** — The marked recovery in the textile field was responsible for a better call for dyes. Red and brown are the most prominent shades in demand. Some improvement was also reported in the tanning trade. The undertone of prices was much better and dye producers are looking forward to additional increases. Imports of synthetic dyes into the U. S. in July totaled 151,089 pounds and were valued at $138,136, it is reported by the U. S. Tariff Commission and the Department of Commerce. These figures compare with 356,106 pounds, valued at $307,350, imported during the same month last year. Imports during the first seven months of 1932 have amounted to 1,986,360 pounds, valued at $1,749,091, while imports in the corresponding period of 1931 were 2,785,721 pounds, valued at $2,420,973.

**Origin**

| | *Percentages* | |
|---|---|---|
| | *July 1932* | *July 1931* |
| Germany | 62.69 | 64.45 |
| Switzerland | 33.49 | 34.22 |
| England | 3.82 | 1.17 |
| Other | .... | .16 |

**Leading Dyes in July**

| | *Pounds* |
|---|---|
| Vat golden yellow GK double paste (single strength) | 9,852 |
| Paper bordeaux GGU | 6,450 |
| Cibanone blue 3G paste | 4,453 |
| Vat printing yellow 5GK double paste (single strength) | 3,800 |
| Rapidogen red G | 3,500 |

Imports of aromatic chemicals during July totaled 3,449 pounds and were valued at $5,393, while imports in the same month last year amounted to 5,107 pounds, valued at $6,915. The total for the first seven months of 1932 is 43,114 pounds, valued at $97,138, compared with 31,148 pounds, valued at $46,868, during the same period in 1931. Medicinals, photographic developers, intermediates, and other coal-tar products amounting to 147,067 pounds and valued at $41,335, were imported in July, compared with 77,561 pounds of these products, valued at $58,165, imported during July last year.

| | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|
| Yellow, 150-200 lb bags....lb. | .18 | .18 | .20 | .18 | .20 | .18 | .20 |
| Animi (Zanzibar) bean & pea 250 lb cases....lb. | .35 | .35 | .40 | .35 | .40 | .35 | .40 |
| Glassy, 250 lb cases....lb. | .50 | .50 | .55 | .50 | .55 | .50 | .55 |
| Asphaltum, Barbadoes (Manjak) 200 lb bags....lb. | .04 | .04 | .06 | .04½ | .12 | .09 | .12 |
| Egyptian, 200 lb cases....lb. | .13 | .13 | .15 | .13 | .17 | .15 | .17 |
| Gilsonite Selects, 200 lb bags ....ton | 30.50 | 30.50 | 32.90 | 30.50 | 32.90 | 30.50 | 32.90 |
| Damar Batavia standard 136, lb. cases....lb. | .08½ | .08½ | .09 | .08½ | .13 | .14 | .20 |
| Batavia Dust, 160 lb bags....lb. | .04 | .04 | .05½ | .05½ | .06 | .06 | .11 |
| E Seeds, 136 lb cases....lb. | .05½ | .05½ | .06½ | .07 | .08 | .08 | .13 |
| F Splinters, 136 lb cases and bags....lb. | .05½ | .05½ | .06 | .06½ | .07½ | .07 | .13½ |
| Singapore, No. 1, 224 lb cases .lb. | .10½ | .10½ | .11 | .10½ | .15 | .18½ | .24 |
| No. 2, 224 lb cases....lb. | .06 | .06 | .07½ | .07 | .10 | .13 | .20½ |
| No. 3, 180 lb bags....lb. | .04½ | .04½ | .05 | .05 | .06 | .07 | .11½ |
| Benzoin Sumatra, U. S. P. 120 lb. cases....lb. | .20 | .19 | .22 | .23 | .34 | .33 | .40 |
| Copal Congo, 112 lb bags, clean opaque....lb. | .16½ | .16½ | .17 | .16 | .17 | .16 | .17 |
| Dark, amber....lb. | .06 | .06 | .07 | .06½ | .07½ | .07½ | .08 |
| Light, amber....lb. | .08 | .08½ | .09 | .08 | .14 | .12½ | .14 |
| Water, white....lb. | .37 | .37 | .45 | .37 | .45 | .37 | .45 |
| Mastic....lb. | .36½ | .35 | .40 | .42 | .58 | .57 | .65 |
| Manila 180-190 lb baskets | | | | | | | |
| Loba A....lb. | .09 | .09 | .10 | .11 | .13 | .13 | .17½ |
| Loba B....lb. | .08 | .08 | .08½ | .09 | .10½ | .13½ | .16½ |
| Loba C....lb. | .07 | .07 | .08 | .08½ | .10 | .10 | .14 |
| M A Sorts....lb. | .04½ | .04½ | .05 | .04½ | .06½ | ..... | ..... |
| D B B Chips....lb. | .05 | .05 | .06 | .05½ | .08 | ..... | ..... |
| East Indies chips, 180 lb bags lb. | .04½ | .04½ | .05 | .05½ | .05 | .09 | .11 |
| Pale bold, 224 lb cs....lb. | .12½ | .12½ | .14 | .15½ | .16 | .17½ | .21 |
| Pale nubs, 180 lb bags...lb. | .06½ | .06½ | .07 | .08½ | .08 | .09 | .12½ | .16 |
| Pontianak, 224 lb cases.... | | | | | | | |
| Bold gen No. 1....lb. | .14 | .14 | .15 | .16 | .16 | .17 | .19 | .21 |
| Gen. chips spot....lb. | .05 | .05 | .06 | .08 | .07 | .08½ | .13½ | .15 |
| Elemi, No. 1, 80-85 lb cs...lb. | .09 | .09 | .09½ | .09½ | .10 | .12 | .12½ | .14 |
| No. 2, 80-85 lb cases....lb. | .08½ | .08½ | .09 | .09 | .09½ | .11½ | .12 | .13½ |
| No. 3, 80-85 lb cases....lb. | .08 | .08 | .08½ | .08½ | .08½ | .11 | .11 | .13 |
| Kauri, 224-226 lb cases No. 1 ....lb. | .20 | .20 | .25 | .42 | .42 | .50 | .48 | .57 |
| No. 2 fair pale....lb. | .20 | .20 | .25 | .30 | .24 | .29 | .32 | .38 |
| Brown Chips, 224-226 lb. cases....lb. | .10 | .10 | .12 | .10 | .12 | .10 | .12 | .12 |
| Bush Chips, 224-226 lb. cases....lb. | .22 | .22 | .24 | .24 | .28 | .34 | .38 | .40 |
| Pale Chips, 224-226 lb cases ....lb. | .11 | .11 | .14 | .14 | .19 | .22 | .24½ | .26 |
| Sandarac, prime quality, 200 lb bags & 300 lb casks....lb. | .23½ | .23½ | .23 | .24 | .18 | .22 | .27 | .40 |
| Helium, 1 lit. bot....lit. | ..... | 25.00 | ..... | 25.00 | ..... | 25.00 | 25.00 | 25.00 |
| Hematine crystals, 400 lb bbls lb. | .10 | .18 | .10 | .18 | .14 | .18 | .14 | .18 |
| Paste, 500 bbls....lb. | ..... | .11 | ..... | .11 | ..... | .11 | .11 | .11 |
| Hemlock 25%, 600 lb bbls wks lb. | .03½ | .04½ | .03 | .04½ | .03 | .03½ | .03 | .03½ |
| Bark....ton | ..... | 16.00 | ..... | 16.00 | ..... | 16.00 | 16.00 | 16.00 |
| Hexalene, 50 gal drs wks....lb. | ..... | .30 | .30 | .40 | .40 | .60 | .60 | .60 |
| Hexamethylenetetramine, drs lb. | .46 | .47 | .46 | .47 | .46 | .50 | .46 | .50 |
| Hoof Meal, f.o.b. Chicago...unit | .80 | .90 | .80 | 1.35 | 1.35 | 2.50 | 2.50 | 3.75 |
| South Amer. to arrive....unit | 1.25 | 1.45 | 1.25 | 1.65 | 1.80 | 2.70 | 2.70 | 3.75 |
| Hydrogen Peroxide, 100 vol, 140 lb cbys....lb. | .20 | .21 | .20 | .21 | .21 | .24 | .21 | .26 |
| Hydroxyamine Hydrochloride lb. | ..... | 3.15 | ..... | 3.15 | ..... | 3.15 | 3.15 | 3.15 |
| Hypernic, 51°, 600 lb bbls....lb. | .11 | .12 | .11 | .12 | .11 | .15 | .12 | .15 |
| Indigo Madras, bbls....lb. | 1.25 | 1.30 | 1.25 | 1.30 | 1.25 | 1.30 | 1.28 | 1.30 |
| 20% paste, drums....lb. | .15 | .18 | .15 | .18 | .15 | .18 | .15 | .18 |
| Synthetic, liquid....lb. | ..... | .12 | ..... | .12 | ..... | .12 | .12 | .12 |
| Iron Chloride, see Ferric o Ferrous | | | | | | | | |
| Iron Nitrate, kegs....lb. | .09 | .10 | .09 | .10 | .09 | .10 | .09 | .10 |
| Coml, bbls....100 lb. | 2.50 | 3.25 | 2.50 | 3.25 | 2.50 | 3.25 | 2.50 | 3.25 |
| Oxide, English....lb. | .04 | .10 | .04 | .10 | .10 | .12 | .10 | .12 |
| Red, Spanish....lb. | .02 | .02½ | .02 | .03½ | .02½ | .03½ | .02½ | .03½ |
| Isopropyl Acetate, 50 gal drs gal. | .85 | .90 | .85 | .90 | .85 | .90 | .85 | .90 |
| Japan Wax, 224 lb cases....lb. | .07 | .07 | .07½ | .07 | .09 | .07½ | .11 | .11½ | .15½ |
| Kieselguhr, 95 lb bgs NY..... | | | | | | | | |
| Brown....ton | 60.00 | 70.00 | 60.00 | 70.00 | 60.00 | 70.00 | 60.00 | 70.00 |
| Lead Acetate, bbls wks...100 lb. | 9.00 | 9.50 | 9.00 | 10.00 | 9.50 | 11.00 | 10.50 | 13.50 |
| White crystals, 500 lb bbls wks....100 lb. | 10.00 | 10.50 | 10.00 | 11.00 | 10.50 | 12.25 | 11.50 | 14.50 |
| Arsenate, drs 1c-1 wks....lb. | .09½ | .13 | .09½ | .13 | .10 | .14 | .13 | .16 |
| Dithiofuroate, 100 lb dr....lb. | ..... | 1.00 | ..... | 1.00 | ..... | 1.00 | 1.00 | 1.00 |
| Metal, c-l NY....100 lb. | ..... | 2.80 | 2.70 | 3.75 | 3.75 | 4.60 | 5.10 | 7.75 |
| Nitrate, 500 lb bbls wks....lb. | .10½ | .14 | .10½ | .14 | .12 | .14 | .13 | .14 |
| Oleate, bbls....lb. | .17½ | .18 | .17½ | .18 | .17½ | .18 | .17½ | .18 |
| Oxide Litharge, 500 lb bbls.lb. | .05½ | .06 | .05½ | .07 | .06½ | .08 | .08½ | .08½ |
| Red, 500 lb bbls wks....lb. | ..... | .07 | .06½ | .07 | .06½ | .08½ | .08½ | .09½ |
| White, 500 lb bbls wks...lb. | .06½ | .07 | .06½ | .07 | .06½ | .08 | .07½ | .09½ |
| Sulfate, 500 lb bbls wk...lb. | .05½ | .06 | .05½ | .06 | .05½ | .07 | .06½ | .08½ |
| Leuna saltpetre, bags c.i.f....ton | ..... | Nom. | ..... | Nom. | ..... | 57.60 | 57.60 | 57.60 |
| S. points c.i.f....ton | ..... | Nom. | ..... | Nom. | ..... | 57.90 | 57.90 | 57.90 |
| Lime, ground stone bags....ton | ..... | 4.50 | ..... | 4.50 | ..... | 4.50 | 4.50 | 4.50 |
| Live, 325 lb bbls wks...100 lb. | ..... | 1.05 | ..... | 1.05 | ..... | 1.05 | 1.05 | 1.05 |
| Lime Salts, see Calcium Salts | | | | | | | | |
| Lime-Sulfur soln bbls....gal. | .15 | .17 | .15 | .17 | .15 | .17 | .15 | .17 |
| Lithopone, 400 lb bbls 1c-1 wks ....lb. | .04½ | .05 | .04½ | .05 | .04½ | .05 | .04½ | .05½ |
| Logwood, 51°, 600 lb bbls....lb. | .05 | .08 | .05 | .08 | .07 | .08 | .07 | .08½ |
| Chips, 150 lb bags....lb. | .03 | .03½ | .03 | .03½ | .03 | .03½ | .03 | .03½ |
| Solid, 50 lb boxes....lb. | .08 | .12½ | .08 | .12½ | .12 | .12½ | .12½ | .12½ |
| Sticks....ton | 24.00 | 26.00 | 24.00 | 26.00 | 24.00 | 26.00 | 24.00 | 26.00 |
| Madder, Dutch....lb. | .22 | .25 | .22 | .25 | .22 | .25 | .22 | .25 |
| Magnesite, calc, 500 lb bbl...ton | 50.00 | 60.00 | 50.00 | 60.00 | 50.00 | 60.00 | 50.00 | 60.00 |

# COLUMBIA BRAND

99% – 100%
**SODA ASH**
58% $Na_2O$
Light – Dense
Dustless or Granular
Especially for Glass Makers

98% – 100%
**CAUSTIC SODA**
76% $Na_2O$
All Tests
Solid – Ground – Flake
and Liquid

**MODIFIED SODAS**

**CALCIUM CHLORIDE**
Flake – Solid – Liquid

**WHITING**

THE COLUMBIA ALKALI CORPORATION
*Executive Sales Offices*
EMPIRE STATE BUILDING, NEW YORK
*Branch Sales Offices*
Barberton, Ohio
431-451 St. Clair St., Chicago  Carew Tower, Cincinnati  Santa Fe Terminal Bldg., Dallas
*Plant at* BARBERTON, OHIO

# NIACET
## *announces*

***Other Products***

Glacial Acetic Acid
U. S. P. Acetic Acid
Acetaldehyde
Acetaldol
Crotonaldehyde
Fastan
Methyl Acetate
Paraldehyde
U. S. P. Paraldehyde
Paraldol

# CROTONIC ACID

Melting Point 72° C  $CH_3.CH:CH.COOH$  Boiling Point 185° C

**Crotonic Acid is a lower member of the series of unsaturated fatty acids which have attained such an important position in the chemical industry.**

**Crotonic Acid combines the properties of an olefine with those of a fatty acid and its wide variety of reactions are of interest in highly diversified fields.**

**The various esters as well as the resins which can be obtained from Crotonic Acid are being investigated by manufacturers of protective coatings of various kinds. Crotonic Acid itself prevents sedimentation and gelatinization of naphthenate, linoleate and resinate driers in volatile organic solvents. The cellulose esters of Crotonic Acid are also of unusual interest.**

**The availability of commercial Crotonic Acid may be of special significance to you and we suggest that its interesting properties receive your careful consideration.**

# Niacet Chemicals Corporation
**SALES OFFICE AND PLANTS  NIAGARA FALLS, NEW YORK**

# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

Imports so far this year have amounted to 658,144 pounds, valued at $360,031; imports in the first seven months of last year were 851,861 pounds, valued at $441,841. Imports of color lakes during July amounted to 370 pounds, valued at $280. This brings total imports this year to 10,572 pounds, with a value of $7,258. Imports in the first seven months of 1931 totaled 5,421 pounds.

**Fertilizer Materials** — Actual trading in fertilizer materials was at a very low ebb in August. Aside from the important decline in nitrate of soda, reported elsewhere, the market was featured by sudden rises in bone material and in dried blood. Sales for top-dressing were slightly better than was anticipated; due, undoubtedly, to the better prices for cotton. July imports of fertilizer and fertilizer materials were about 50 per cent of those for July, 1931, while exports declined about 32 per cent, according to the N. F. A. Imports of sodium nitrate totaled but 100 tons, compared with 18,809 tons for July, 1931, and 28,644 tons for July, 1930. Ammonium sulfate imports for July were 19,797 tons, against 2,268 tons for July, 1931. Exports of phosphate rock during July amounted to 47,026 tons, against 77,148 tons for July, 1931. Exports for the fiscal year ended July 31, 1932, were 80 per cent of those for the preceding fiscal year. Exports of ammonium sulfate during the latest year totaled 24,359 tons against 89,622 tons for the preceding period and 125,602 tons exported two years ago. Exports of "other nitrogenous chemicals," which includes sodium nitrate, calcium nitrate, urea, etc., totaled 105,706 tons, compared with 53,046 tons for the preceding year and 21,869 tons two years ago. Exports of phosphate rock made a relatively good showing. During the latest year 806,192 tons were exported, compared with 967,537 tons for the preceding year and 1,305,785 tons during the banner year two seasons ago.

**Glycerine** — Producers were looking forward to larger shipments shortly in preparation for the anti-freeze season. A more comprehensive advertising campaign is planned and unless duplication of last year's mild weather occurs it is hoped that sales will be larger. Present stocks are heavy. Prices were unchanged from last month's levels.

**Lead Pigments** — The metal market showed unexpected strength in August with the result that dry red lead, litharge, and orange mineral were quoted at higher prices. The volume of business however, was not large at the advanced figures. A slight seasonal improvement is expected in September, but the paint industry is rather sanguine of any major change in basic

| | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|
| **Magnesium** | | | | | | | |
| Magnesium Carb, tech, 70 lb. bags NY lb. | .05¾ | .06 | .05¾ | .06½ | .06 | .06½ | .06 | .06½ |
| Chloride flake, 375 lb. drs c-l wks ton | 35.00 | 36.00 | 35.00 | 36.00 | 35.00 | 36.00 | 36.00 | 36.00 |
| Imported shipment ton | 31.75 | 33.00 | 31.75 | 33.00 | 31.75 | 33.00 | 31.75 | 33.00 |
| Fused, imp., 900 lb bbls NY ton | ..... | 31.00 | ..... | 31.00 | ..... | 31.00 | 31.00 | 31.00 |
| Fluosilicate, crys, 400 lb bbls wks lb. | .10 | 10½ | .10 | .10½ | .10 | .10½ | .10 | .10½ |
| Oxide, USP, light, 100 lb bbls lb. | ..... | .42 | ..... | .42 | ..... | .42 | .42 | .42 |
| Heavy, 250 lb bbls lb. | ..... | .50 | ..... | .50 | ..... | .50 | .50 | .50 |
| Peroxide, 100 lb cs lb. | 1.00 | 1.25 | 1.00 | 1.25 | 1.00 | 1.25 | 1.00 | 1.25 |
| Silicofluoride, bbls lb. | .09¾ | .10¼ | .09¾ | .10¼ | .09¾ | .10¼ | .09¾ | .10¼ |
| Stearate, bbls lb. | .24 | .26 | .24 | .26 | .24 | .26 | .25 | .26 |
| Manganese Borate, 30%, 200 lb bbls lb. | .15 | .16 | .15 | .19 | ..... | .19 | .19 | .19 |
| Chloride, 600 lb casks lb. | .07 | .08 | .07 | .08½ | .07½ | .08½ | .07½ | .08½ |
| Dioxide, tech (peroxide) drs lb. | .03½ | .06 | .03½ | .06 | .03½ | .06 | .03½ | .06 |
| Manganese Ore, cents per unit ... | .18 | .23 | .18 | .23 | ..... | ..... | ..... | ..... |
| Sulfate, 550 lb drs NY lb. | .07 | .08 | .07 | .08 | .07 | .08 | .07 | .08 |
| Mangrove 55%, 400 lb bbls ... lb. | ..... | .04 | ..... | .04 | .03½ | .04 | .03½ | Nom. |
| Bark, African ton | 23.00 | 23.50 | 23.00 | 25.00 | 23.00 | 29.75 | 29.75 | 33.00 |
| Marble Flour, bulk ton | 14.00 | 15.00 | 14.00 | 15.00 | 14.00 | 15.00 | 14.00 | 15.00 |
| Mercurous chloride lb. | .82 | .87 | .82 | .93 | .93 | 2.05 | 2.05 | 2.05 |
| Mercury metal ..... 76 lb flask | 47.00 | 48.00 | 47.00 | 74.50 | 64.00 | 106.00 | 106.00 | 124.50 |
| Meta-nitro-aniline lb. | .67 | .69 | .67 | .69 | .67 | .69 | .67 | .69 |
| Meta-nitro-para-toluidine 200 lb. bbls lb. | 1.40 | 1.55 | 1.40 | 1.55 | 1.40 | 1.55 | 1.50 | 1.55 |
| Meta-phenylene-diamine 300 lb. bbls lb. | .80 | .84 | .80 | .84 | .80 | .84 | .80 | .84 |
| Meta-toluene-diamine, 300 lb. bbls lb. | .67 | .69 | .67 | .69 | .67 | .69 | .67 | 69 |
| **Methanol** | | | | | | | | |
| Methanol, (Wood Alcohol) ..... | | | | | | | | |
| 95% tanks gal. | .33 | .35 | .33 | .35 | .33 | .37 | .35 | .48 |
| 97% tanks gal. | .34 | .39 | .34 | .39 | .34 | .43 | .39 | .49 |
| Pure, Synthetic drums cars gal. | .39½ | .41½ | .39½ | .41½ | .39½ | .42½ | .42½ | .50 |
| Synthetic tanks gal. | ..... | .35½ | ..... | .35½ | .35½ | .40½ | .40½ | .50 |
| Methyl Acetate, drums ..... gal. | .17 | .17½ | .17 | .17½ | ..... | Nom. | Nom. | Nom. |
| Acetone, drums gal. | .47 | .49 | .47 | .55 | 50 | .70 | .65 | .77 |
| Anthraquinone lb. | .85 | .95 | .85 | .95 | .85 | .95 | .70 | .85 |
| Cellosolve, (See Ethylene Glycol Mono Methyl Ether) | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Chloride, 90 lb cyl. lb. | .45 | .45 | .45 | .45 | .45 | .45 | .45 | .45 |
| Furoate, tech., 50 gal. dr. lb. | ..... | .50 | ..... | .50 | ..... | .50 | .50 | .50 |
| Mica, dry grd. bags wks ..... lb. | 65.00 | 80.00 | 65.00 | 80.00 | 65.00 | 80.00 | 65.00 | 80.00 |
| Wet, ground, bags wks. ..... lb. | 110.00 | 115.00 | 110.00 | 115.00 | 110.00 | 115.00 | 110.00 | 115.00 |
| Michler's Ketone, kegs ..... lb. | ..... | 3.00 | ..... | 3.00 | ..... | 3.00 | 3.00 | 3.00 |
| Monochlorobenzene, drums see, Chlorobenzene, mono ..... lb. | | | | | | | | |
| Monomethylparaminosulfate 100 lb drums lb. | 3.75 | 4.00 | 3.75 | 4.00 | 3.75 | 4.00 | 3.75 | 4.00 |
| Montan Wax, crude, bags .... lb. | .05 | .06 | .05 | .07 | .05½ | .07 | .06 | .07 |
| Myrobalans 25%, liq bbls .... lb. | .03¾ | .04½ | .03¾ | .04½ | .03¾ | .04½ | .03¾ | .04½ |
| 50% Solid, 50 lb boxes ..... lb. | .05 | .05½ | .05 | .05½ | .05 | .05½ | .05 | .05½ |
| J1 bags ton | 34.00 | 35.00 | 34.00 | 35.00 | 34.00 | 35.00 | 34.00 | 41.00 |
| J2 bags ton | ..... | 18.50 | 15.25 | 18.50 | 15.50 | 22.50 | 19.75 | 26.50 |
| R2 bags ton | ..... | 18.00 | 14.75 | 17.50 | 16.00 | 20.00 | 19.00 | 27.50 |
| Naphtha, v.m.& p. (deodorized) tanks gal. | .09½ | .10 | .09½ | .10 | ..... | ..... | ..... | ..... |
| Naphthalene balls, 250 lb bbls wks lb. | ..... | .05½ | .03¾ | 05½ | .03¾ | .04¾ | .03¾ | .05½ |
| Crushed, chipped bgs wks. .. lb. | ..... | .04½ | ..... | .04½ | ..... | .04 | .04 | .04½ |
| Flakes, 175 lb bbls wks ..... lb. | ..... | .03½ | ..... | .03¾ | ..... | .03¾ | .03¾ | .05 |
| Nickel Chloride, bbls kegs .... lb. | .18 | .20 | .18 | .20 | .18 | .21 | .20 | .21 |
| Oxide, 100 lb kegs NY ..... lb. | .35 | .37 | .35 | .40 | .37 | .40 | .37 | .40 |
| Salt bbl. 400 bbls lb NY ... lb. | .10½ | .13 | .10½ | .13 | .10½ | .13 | .10½ | .13 |
| Single, 400 lb bbls NY ..... lb. | .10½ | .12 | .10½ | .12 | .10½ | .12 | .10½ | .13 |
| Metal ingot lb. | .35 | .35 | .35 | .35 | .35 | ..... | ..... | ..... |
| Nicotine, free 40%, 8 lb tins, cases lb. | 1.25 | 1.30 | 1.25 | 1.30 | 1.25 | 1.30 | 1.25 | 1.30 |
| Sulfate, 10 lb tins ..... lb. | .88½ | .90 | .88½ | 1.20 | .98½ | 1.20 | .98½ | 1.20 |
| Nitre Cake, bulk ..... ton | 10.00 | 12.00 | 10.00 | 12.00 | 12.00 | 14.00 | 12.00 | 18.00 |
| Nitrobenzene, redistilled, 1000 lb drs wks lb. | .09 | .09½ | .09 | .09½ | .09 | .09½ | .09 | .09½ |
| Nitrocellulose, c-l-l-cl, wks. .. lb. | .25 | .36 | .25 | .36 | .25 | .36 | .25 | .36 |
| Nitrogenous Material, bulk unit | 1.45 | 1.50 | 1.35 | 1.55 | 1.50 | 2.70 | 2.50 | 3.40 |
| Nitronaphthalene, 550 lb bbls lb. | ..... | .25 | ..... | 25 | ..... | .25 | .25 | .25 |
| Nitrotoluene, 1000 lb drs wks lb. | .14 | .15 | .14 | .15 | .14 | .15 | .14 | .15 |
| Nutgalls Aleppy, bags ..... lb. | .... | .18 | ..... | .18 | .16 | .18 | .16 | .16½ |
| Chinese, bags ..... lb. | .17 | .18 | .17 | .18 | .17 | .18 | .12 | .13 |
| Oak Bark, ground ..... ton | 30.00 | 35.00 | 30.00 | 35.00 | 30.00 | 35.00 | 30.00 | 35.00 |
| Whole ..... ton | 20.00 | 23.00 | 20.00 | 23.00 | 20.00 | 23.00 | 20.00 | 23.00 |
| Orange-Mineral, 1100 lb casks NY lb. | ..... | .10¼ | .09½ | .10¼ | .10½ | .13 | .11½ | .13 |
| Orthoaminophenol, 50 lb kgs. lb. | 2.15 | 2.25 | 2.15 | 2.25 | 2.15 | 2.25 | 2.15 | 2.25 |
| Orthoanisidine, 100 lb drs .... lb. | 2.50 | 2.60 | 2.50 | 2.60 | 2.50 | 2.60 | 2.50 | 2.60 |
| Orthochlorophenol, drums .... lb. | .50 | .65 | .50 | .65 | .50 | .65 | .50 | .65 |
| Orthocresol, drums ..... lb. | .13 | .15 | .13 | .22 | .18 | .25 | .18 | .35 |
| Orthodichlorobenzene, 1000 lb. drums lb. | .07 | .10 | .07 | .10 | .07 | .10 | .07 | 10 |
| Orthonitrochlorobenzene, 1200 lb drs wks lb. | .28 | .29 | .28 | .29 | .28 | .33 | .30 | .33 |
| Orthonitrotoluene, 1000 lb drs wk lb. | .16 | .18 | .16 | .18 | .16 | .18 | .16 | .18 |
| Orthonitrophenol, 350 lb dr. .. lb. | .85 | .90 | .85 | .90 | .85 | .90 | .85 | 90 |
| Orthotoluidine, 350 lb bbl 1c-1 lb. | .20 | .22 | .20 | .22 | .25 | .30 | .25 | .30 |

# Methanol

(NATURAL)

All Grades Including
Pure Methanol
97% Methanol
95% Methanol
Denaturing Grade Methanol

●

# Methyl Acetone

Shipments In
Tank Cars Drums

●

GENERAL OFFICE
212 TERMINAL BLDG. - BRADFORD, PA.

## WOOD DISTILLERS CORPORATION

*Refinery—*
*Cadosia, N. Y.*

*Sales Office & Warehouse*
*7-11 Getty Ave. - Paterson, N. J.*
TELEPHONE SHERWOOD 2-5027

## Church & Dwight, Inc.

*Established 1846*

80 MAIDEN LANE NEW YORK

**Bicarbonate of Soda**

**Sal Soda**

**Monohydrate of Soda**

*Standard Quality*

conditions until early next spring. American Bureau of Metal Statistics reports production of lead throughout the world in July totaled 100,435 short tons, against 104,909 short tons in June and 114,419 short tons in July, 1931. Output of lead for the first seven months of 1932 was 773,882 short tons, compared with 921,443 short tons in the first seven months of 1931. Lead production of the world in July totaled 100,435 short tons, compared with 104,909 in June, 115,027 in May and 114,419 tons in July, 1931. Average daily output in July was 3,240 tons, 3,497 in June, 3,711 in May and 3,961 tons in July, 931. July output is lowest for any month in many years. Following table shows in short tons output of lead on a refined basis of various important countries, with output credited so far as possible to country of origin of the ore itself.

| | *June* | *July* | *Jan.-July* |
|---|---|---|---|
| United States | 26,068 | 15,819 | 161,631 |
| Canada | 11,871 | 11,031 | 79,882 |
| Mexico | 6,264 | 12,157 | 84,990 |
| Germany | 7,871 | 6,716 | 54,616 |
| Italy | 2,604 | 2,749 | 17,764 |
| Spain and Tunis | 12,101 | 11,914 | 85,545 |
| Europe, n. e. s. (a) | 13,800 | 13,900 | 91,100 |
| Australia | 16,444 | 18,196 | 116,593 |
| Burma | 6,586 | 6,653 | 46,461 |
| Elsewhere (a) | 1,300 | 1,300 | 15,300 |
| World's total | 104,909 | 100,435 | 773,882 |
| Foreign | 78,841 | 84,616 | 592,251 |

(a) Estimated or partly estimated. (b) Revised.

**Mercury** — The weak position of this commodity continued. With a large surplus of material there is little likelihood of any change in the present market setup for some time.

**Methanol** — With production sharply curtailed and stocks showing definite signs of diminishing, the undertone of the market was firm. Producers of synthetic are looking forward to larger tonnages in the anti-freeze field this coming winter. Production and stock figures for the first six months of 1932 compare with the previous year as follows:

| | *Totals, 6 Mos. January-June* | |
|---|---|---|
| | *1931* | *1932* |
| Methanol: | | |
| Refined Methanol (Gals.): | | |
| From Wood Distillation: | | |
| Production | 1,206,901 | 645,678 |
| Shipments | 1,088,232 | 559,000 |
| Stocks, end of month. | ..... | ..... |
| Synthetic Methanol: | | |
| Production | 4,388,265 | 3,603,207 |
| Shipments | 2,575,639 | 2,629,277 |
| Stocks, end of month. | ..... | ..... |
| Crude Methanol (Gals.): | | |
| Production | 2,233,736 | 1,435,553 |
| Stocks, end of month. | ..... | ..... |
| Acetate of Lime (Pounds): | | |
| Production | 31,454,375 | 19,460,779 |
| Shipments | 27,802,257 | 21,044,723 |

**Naval Stores** — All grades of rosin were higher in August. Turpentine prices were advanced also. Confidence in the general naval stores situation is returning, based largely on reports that production will be cut sharply both here and abroad.

| | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|
| Binoxalate, 300 lb bbls.....lb. | .14 | .14 | .17 | .14 | .17 | .14 | .17 |
| Bisulfate, 100 lb kegs.....lb. | .16 | .16 | .30 | .16 | .30 | .30 | .30 |
| Carbonate, 80-85% calc. 800 lb casks.....lb. | ..... | .0475 | .05 | .04¾ | .07¼ | .05¼ | .05¼ |
| Chlorate crystals, powder 112 lb keg wks.....lb. | .08 | .08 | .08½ | .08 | .08½ | .08 | .09 |
| Chloride, crys bbls.....lb. | .04 | .04 | .04¼ | .04 | .06 | .05½ | .06 |
| Chromate, kegs.....lb. | .23 | .23 | .28 | .23 | .28 | .23 | .28 |
| Cyanide, 110 lb. cases.....lb. | .50 | .50 | .57½ | .55 | .57½ | .55 | .57½ |
| Metabisulfite, 300 lb. bbl...lb. | .10½ | .10 | .11 | .13 | .11 | .13 | .12 | .13 |
| Oxalate, bbls.....lb. | .16 | .16 | .24 | .20 | .24 | .20 | .24 |
| Perchlorate, casks wks.....lb. | .09 | .09 | .11 | .09 | .12 | .11 | .12 |
| Permanganate, USP, crys 500 & 100 lb drs wks.....lb. | .16 | .16 | .16½ | .16 | .16½ | .16 | .16½ |
| Prussiate, red, 112 lb keg...lb. | ..... | .38½ | ..... | .35 | .40 | .38 | .40 |
| Yellow, 500 lb casks.....lb. | .16½ | .16 | .16½ | .21 | .18½ | .21 | .18½ | .21 |
| Tartrate Neut, 100 lb keg...lb. | ..... | .21 | ..... | .21 | ..... | .21 | .21 | .21 |
| Titanium Oxalate, 200 lb bbls .....lb. | .21 | .21 | .23 | .21 | .23 | .21 | .23 | .21 | .23 |
| Propane, group 3, tanks..... | ..... | .07 | ..... | ..... | ..... | ..... | ..... | ..... |
| Propyl Furoate, 1 lb tins.....lb. | ..... | 5.00 | ..... | 5.00 | ..... | 5.00 | 5.00 | 5.00 |
| Pumice Stone, lump bags.....lb. | .04 | .04 | .05 | .04 | .05 | .04 | .05 |
| 250 lb bbls.....lb. | .04½ | .04½ | .06 | .04½ | .06 | .04½ | .06 |
| Powdered, 350 lb bags.....lb. | .02½ | .02½ | .03 | .02½ | .03 | .02½ | .03 |
| Putty, commercial, tube..100 lb. | 2.00 | 2.00 | 2.45 | 2.35 | 2.45 | .03½ | .03½ |
| Linseed Oil, kegs.....100 lb. | 3.40 | 3.40 | 4.75 | 4.00 | 4.75 | .05½ | .05½ |
| Pyridine, 50 gal drums .....gal. | .85 | .85 | 1.25 | 1.50 | 1.75 | 1.50 | 1.75 |
| Pyrites, Spanish cif Atlantic ports bulk.....unit | .12 | .12 | .13 | .12 | .13¼ | .13 | .13¼ |
| Quebracho, 35% liquid tks...lb. | .02 | .02½ | .02 | .03 | .02¾ | .04 | .02¾ | .04 |
| 450 lb bbls c-l.....lb. | .02½ | .02¾ | .02½ | .03¾ | .03¾ | .03¼ | .03¾ |
| 35% Bleaching, 450 lb bbl..lb. | .04 | .05¼ | .04 | .05¼ | .04 | .05½ | .05¼ | .04¼ |
| Solid, 63%, 100 lb bales cif..lb. | .02 | .02½ | .02 | .02½ | .02½ | .05½ | .05 | .05½ |
| Clarified, 64%, bales... lb. | .02½ | .03 | .02½ | .03¼ | .03¼ | .05¼ | .05¼ | .05¼ |
| Quercitron, 51 deg liquid 450 lb bbls .....lb. | .05½ | .06 | .05½ | .06 | .05½ | .06 | .05½ | .06 |
| Solid, 100 lb boxes.....lb. | .09½ | .13 | .09½ | .13 | .09½ | .13 | .09½ | .13 |
| Bark, Rough.....ton | ..... | 14.00 | ..... | 14.00 | ..... | 14.00 | 14.00 | 14.00 |
| Ground.....ton | 34.00 | 35.00 | 34.00 | 35.00 | 34.00 | 35.00 | 34.00 | 35.00 |
| R Salt, 250 lb bbls wks.....lb. | .40 | .44 | .40 | .44 | .40 | .44 | .40 | .45 |
| Red Sanders Wood, grd bbls. lb. | ..... | .18 | ..... | .18 | ..... | .18 | .18 | .18 |
| Resorcinol Tech, cans.....lb. | .65 | .70 | .65 | .70 | .65 | 1.25 | .90 | 1.25 |
| Rosin Oil, 50 gal bbls, first run .....gal. | .41 | .43 | .41 | .45 | .47 | .58 | .56 | .58 |
| Second run.....gal. | .45 | .47 | .45 | .51 | .51 | .61 | .59 | .61 |
| **Rosin** | | | | | | | | |
| Rosins 600 lb bbls 280 lb.....unit ex. yard N. Y. | | | | | | | | |
| B | ..... | 3.60 | 3.00 | 3.60 | 3.25 | 4.95 | 5.35 | 7.75 |
| D | ..... | 3.65 | 3.15 | 3.75 | 3.35 | 5.50 | 5.50 | 8.00 |
| E | ..... | 3.85 | 3.37½ | 4.00 | 3.45 | 5.90 | 5.52½ | 8.17 |
| F | ..... | 4.00 | 3.40 | 4.10 | 3.70 | 6.20 | 5.55 | 8.45 |
| G | ..... | 4.00 | 3.45 | 4.15 | 3.75 | 6.25 | 5.60 | 8.45 |
| H | ..... | 4.00 | 3.45 | 4.20 | 3.80 | 6.30 | 5.60 | 8.55 |
| I | ..... | 4.00 | 3.47½ | 4.25 | 3.85 | 6.35 | 5.62½ | 8.58 |
| K | ..... | 4.25 | 3.60 | 4.65 | 4.10 | 6.45 | 5.62½ | 8.65 |
| M | ..... | 4.85 | 4.20 | 5.10 | 4.20 | 6.70 | 5.65 | 8.80 |
| N | ..... | 5.30 | 4.65 | 6.05 | 4.85 | 6.95 | 6.05 | 8.95 |
| WG | ..... | 5.75 | 5.25 | 6.45 | 6.15 | 8.15 | 6.85 | 9.25 |
| WW | ..... | 6.50 | 5.85 | 6.55 | 6.45 | 8.90 | 7.85 | 9.85 |
| Rotten Stone, bags mines....ton | 23.50 | 24.00 | 20.00 | 23.00 | 24.00 | 20.00 | 18.00 | 30.00 |
| Lump, imported, bbls.....lb. | .05 | .07 | .05 | .07 | .05 | .07 | .05 | .07 |
| Selected bbls.....lb. | .09 | .12 | .09 | .12 | .09 | .12 | .09 | .12 |
| Powdered, bbls.....lb. | .02 | .05 | .02 | .05 | .02 | .05 | .02 | .05 |
| Sago Flour, 150 lb bags.....lb. | .04½ | .05 | .04¼ | .05 | .04¼ | .05 | .04¼ | .05 |
| Sal Soda, bbls wks.....100 lb. | .90 | 1.00 | .90 | 1.00 | ..... | 1.00 | 1.00 | 1.00 |
| Salt Cake, 94-96% c-l wks...ton | 13.00 | 14.00 | 13.00 | 15.50 | 14.00 | 19.00 | 15.50 | 24.00 |
| Chrome.....ton | 12.00 | 13.00 | 12.00 | 14.50 | 13.00 | 17.00 | 14.50 | 25.00 |
| Saltpetre, double refd granular 450-500 lb bbls.....lb. | .06 | .06¾ | .06 | .06¾ | .06 | .06¾ | .06½ | .06¾ |
| Satin, White, 500 lb bbls.....lb. | ..... | .01½ | ..... | .01½ | ..... | .01½ | .01½ | .01½ |
| Shellac Bone dry bbls.....lb. | .18 | .20 | .16 | .26 | .26 | .29 | .28 | .47 |
| Garnet, bags.....lb. | .15 | .16 | .15 | .20 | .19 | .26 | .24 | .40 |
| Superfine, bags.....lb. | .12½ | .12¾ | .10 | .14 | .16 | .22 | .20 | .39 |
| T. N. bags.....lb. | .11½ | .12 | .09 | .13 | .14½ | .17 | .18 | .34 |
| Schaeffer's Salt, kegs.....lb. | .48 | .50 | .48 | .50 | .53 | .57 | .53 | .57 |
| Silica, Crude, bulk mines....ton | 8.00 | 11.00 | 8.00 | 11.00 | 8.00 | 11.00 | 8.00 | 11.00 |
| Refined, floated bags.....ton | 22.00 | 30.00 | 22.00 | 30.00 | 22.00 | 30.00 | 22.00 | 30.00 |
| Air floated bags.....ton | ..... | 32.00 | ..... | 32.00 | ..... | 32.00 | 32.00 | 32.00 |
| Extra floated bags.....ton | 30.00 | 35.00 | 30.00 | 40.00 | 32.00 | 40.00 | 32.00 | 40.00 |
| Soapstone, Powdered, bags f.o.b. mines.....ton | 15.00 | 22.00 | 15.00 | 22.00 | 15.00 | 22.00 | 15.00 | 22.00 |
| **Soda** | | | | | | | | |
| Soda Ash, 58% dense, bags c-l wks.....100 lb. | ..... | 1.17½ | ..... | 1.17½ | ..... | 1.17½ | 1.40 | 1.40 |
| 58% light, bags.....100 lb. | ..... | 1.15 | ..... | 1.15 | ..... | 1.15 | 1.34½ | 1.34½ |
| Contract, bags c-l wks..100 lb. | ..... | 1.15 | ..... | 1.15 | 1.15 | 1.15 | 1.32 | 1.32 |
| Soda Caustic, 76% grnd & flake drums.....100 lb. | ..... | 2.90 | ..... | 2.90 | ..... | 2.90 | 3.00 | 3.35 |
| 76% solid drs.....100 lb. | ..... | 2.50 | ..... | 2.50 | ..... | 2.50 | 2.90 | 2.95 |
| Sodium Acetate, tech....450 lb. bbls wks.....lb. | ..... | .05 | .04½ | .05 | .04½ | .06 | .04 | .05½ |
| Arsenate, drums.....lb. | .25 | .35 | .25 | .35 | .25 | .35 | .18 | .19 |
| Arsenite, drums.....gal. | .50 | .75 | .50 | .75 | .50 | .75 | .50 | 1.00 |
| Bicarb, 400 lb bbl.....100 lb. | ..... | 2.25 | ..... | 2.25 | 2.35 | 2.35 | 2.41 | 2.41 |

# MALLINCKRODT PHENOBARBITAL

**Test its superiority yourself**

Claims are made for this product . . . . and for that product. But there is no fairer way to prove a claim than to examine the products yourself.

Make a few simple comparisons of Mallinckrodt's Phenobarbital with others on the market . . . . Prove its superiority to your own satisfaction. Note its form . . . . see how much clearer, whiter and more crystalline the Mallinckrodt Phenobarbital granules are compared with phenobarbital A, B and C. Compare their size . . . . see how uniform they are in comparison with the varying size of the particles of products A, B and C. In Solution . . . . see how clear Mallinckrodt Phenobarbital is. Note the almost complete absence of fiber content and residue . . . . see with your own eyes the freedom from foreign materials compared to other brands.

The comparison itself is simple, but it will prove the claims that Mallinckrodt Phenobarbital is a purer and more desirable product.

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is a related Mallinckrodt product that stands out under a comparative test. Note its better appearance . . . . its glistening crystalline granules. Note its clarity in alcoholic solution . . . . and that the solution remains brilliant for a long time without becoming turbid and without indication of decomposition.

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CHICAGO, ILLINOIS

# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

Stocks in consumers' hands are at a very low mark. July production of naval stores by steam distillation and solvent treatment of wood and stocks of these products on hand July 31, according to data collected by the producers' committee, through Arthur Langmeier, Hercules Powder, secretary, were as follows:

**Production**

| | *Rosin 500-lb. barrels* | *Turpentine bbls. (50 gallons)* | *Pine oil Gallons* |
|---|---|---|---|
| Month of July | 30,076 | 4,878 | †201,608 |
| Total from April 1, 1932 | 116,599 | 19,271 | †732,933 |

**Stocks at Plants**

| | | | |
|---|---|---|---|
| Total July 31, 1932 | 104,448 | 7,412 | ..... |
| March 31, 1932 | 90,540 | 5,835 | ..... |
| Change | +13,908 | +1,577 | ..... |

Note.—Rosin production and stocks include all grades of wood rosin.

While the exports of both spirits turpentine and rosin for July were smaller than for that month in either of the previous four years the total months, April-July, are larger than for those months last year, while those of rosin show but a small decrease. For July and April-July the foreign naval stores movement for four years has been as follows:

**Exports Spirits Turpentine**

*(Barrel 50 Gallons)*

| *Year* | *July* | *April-July* |
|---|---|---|
| 1932 | 28,210 | 94,211 |
| 1931 | 42,835 | 78,754 |
| 1930 | 42,095 | 122,209 |
| 1929 | 44,453 | 131,945 |
| 1928 | 34,113 | 97,331 |

**Exports Rosin**

*(Barrel 500 pounds)*

| *Year* | *July* | *April-July* |
|---|---|---|
| 1932 | 111,679 | 385,564 |
| 1931 | 167,189 | 404,365 |
| 1930 | 119,929 | 474,873 |
| 1929 | 156,028 | 509,979 |
| 1928 | 123,859 | 446,108 |

**Potash** — Summer dullness was responsible for the lack of interest displayed in this commodity. With the turn of the month foreign producers withdrew the five per cent discount allowed on purchases up to August 31 and domestic producers the six per cent discount for similar dating. July fertilizer tag sales in the sixteen tag sale States were approximately 53 per cent of those for July, 1931. In the South the sales were 57 per cent, while in the three Midwestern tag sale States the sales were but 17 per cent of those for last July. During the twelve months ended July 31, 1931, tag sales in the Southern States were 63 per cent of those for the previous season, while in the three Midwestern tag sale States the sales were 48 per cent of those a year ago. The grand total for the entire sixteen States represented 62 per cent of the total for the previous season, being 2,740,909 tons, against 4,404,439 tons during the 1930-1931 season. The best showing was made during the fiscal year in Florida, South Carolina, Mississippi, Virginia and North Carolina. The sales in these States ranged from 65 per

| | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|
| Orthonitroparachlorphenol, tins ..... lb. | .70 | .75 | .70 | .75 | .70 | .75 | .70 | .75 |
| Osage Orange, crystals ..... lb. | .16 | .17 | .16 | .17 | .16 | .17 | .16 | .17 |
| 51 deg. liquid ..... lb. | .06 | .06½ | .06 | .07½ | .07 | .07½ | .07 | .07½ |
| Powdered, 100 lb bags ..... lb. | .14½ | .15 | .14½ | .15 | .14½ | .15 | .14½ | .15 |
| Paraffin, refd, 200 lb cs slabs 123-127 deg. M. P. ..... lb. | .02¾ | .03 | .02¾ | .03 | .03¼ | .03 | .03¼ | .04⅞ |
| 128-132 deg. M. P. ..... lb. | .03¼ | .03½ | ..... | .03½ | .03¾ | .03¾ | .03¾ | .06¾ |
| 133-137 deg. M. P. ..... lb. | .04 | .04½ | .04 | .04¾ | .04¾ | .04¾ | .04¾ | .07½ |
| Para Aldehyde, 110-55 gal drs. lb. | .20½ | .23 | .20½ | .23 | .20½ | .23 | .20½ | .23 |
| Aminoacetanilid, 100 lb bg. lb. | .52 | .60 | .52 | .60 | .52 | .60 | .52 | 1.05 |
| Aminohydrochloride, 100 lb. kegs ..... lb. | 1.25 | 1.30 | 1.25 | 1.30 | 1.25 | 1.30 | 1.25 | 1.30 |
| Aminophenol, 100 lb kegs ... lb. | .78 | .80 | .78 | .80 | .82 | .86 | .92 | 1.02 |
| Chlorophenol, drums ..... lb. | .50 | .65 | .50 | .65 | .50 | .65 | .50 | .65 |
| Coumarone, 330 lb drums .. lb. | ..... | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| Cymene, refd, 110 gal dr. . gal. | 2.25 | 2.50 | 2.25 | 2.50 | 2.25 | 2.50 | 2.25 | 2.50 |
| Dichlorobenzene, 150 lb bbls wks ..... lb. | .15½ | .16 | .15½ | .16 | .15½ | .20 | .17 | .20 |
| Nitroacetanilid, 300 lb bbls. lb. | .45 | .52 | .45 | .52 | .45 | .55 | .50 | .55 |
| Nitroaniline, 300 lb bbls wks ..... lb. | .48 | .55 | .48 | .55 | .48 | .55 | .48 | .55 |
| Nitrochlorobenzene, 1200 lb drs wks ..... lb. | .23 | .26 | .23 | .26 | .23 | .26 | .23 | .26 |
| Nitro-orthotoluidine, 300 lb. bbls ..... lb. | 2.75 | 2.85 | 2.75 | 2.85 | 2.75 | 2.85 | 2.75 | 2.85 |
| Nitrophenol 185 lb bbls .... lb. | .45 | .50 | .45 | .50 | .45 | .50 | .45 | .50 |
| Nitrosodimethylaniline, 120 lb bbls ..... lb. | .92 | .94 | .92 | .94 | .92 | .94 | .92 | .94 |
| Nitrotoluene, 350 lb bbls ... lb. | .29 | .31 | .29 | .31 | .29 | .31 | .29 | .31 |
| Phenylenediamine, 350 lb bbls ..... lb. | 1.15 | 1.20 | 1.15 | 1.20 | 1.15 | 1.20 | 1.15 | 1.20 |
| Toluenesulfonamide, 175 lb bbls ..... lb. | .70 | .75 | .70 | .75 | .70 | .75 | .70 | .75 |
| Toluenesulfonchloride, 410 lb bbls wks ..... lb. | .20 | .22 | .20 | .22 | .20 | .22 | .20 | .22 |
| Toluidine, 350 lb bbls wk .. lb. | .42 | .43 | .42 | .43 | .40 | .44 | .38 | .40 |
| Paris Green, Arsenic Basis 100 lb kegs ..... lb. | ..... | .24 | .24 | .27 | ..... | .27 | .27 | .27 |
| 250 lb kegs ..... lb. | ..... | .23 | .23 | .25 | .25 | .26 | .25 | .25 |
| Persian Berry Ext., bbls ..... lb. | .25 | Nom | .25 | Nom. | .25 | Nom. | .25 | Nom. |
| Pentasol (see Alcohol, Amyl) ... | | | | | | | | |
| Pentasol Acetate (see Amyl Acetate) ..... | | | | | | | | |
| Petrolatum, Green, 300 lb bbl. lb. | .02 | .02½ | .02 | .02½ | .02 | .02½ | .02 | .02½ |
| Phenol, 250-100 lb drums .... lb. | .14¼ | .15 | .14¼ | .15 | .14¼ | .15 | .14¼ | .15 |
| Phenyl-Alpha-Naphthylamine, 100 lb kegs ..... lb. | ..... | 1.35 | ..... | 1.35 | ..... | 1.35 | 1.35 | 1.35 |
| Phenylhydrazine Hydrochloride ..... lb. | 2.90 | 3.00 | 2.90 | 3.00 | 2.90 | 3.00 | 2.90 | 3.00 |
| **Phosphate** | | | | | | | | |
| Phosphate Acid (see Superphosphate) | | | | | | | | |
| Phosphate Rock, f.o.b. mines Florida Pebble, 68% basis. ton | 3.10 | 3.25 | 3.10 | 3.25 | 3.10 | 3.25 | 3.00 | 3.15 |
| 70% basis ..... ton | 3.75 | 3.90 | 3.75 | 3.90 | 3.75 | 3.90 | 3.75 | 4.00 |
| 72% basis ..... ton | 4.25 | 4.35 | 4.25 | 4.35 | 4.25 | 4.35 | 4.25 | 4.50 |
| 75-74% basis ..... ton | 5.25 | 5.50 | 5.25 | 5.50 | 5.25 | 5.50 | 5.25 | 5.50 |
| 75% basis ..... ton | ..... | 5.75 | ..... | 5.75 | ..... | 5.75 | 5.75 | 5.75 |
| 77-80% basis ..... ton | ..... | 6.25 | ..... | 6.25 | ..... | 6.25 | 6.25 | 6.25 |
| Tennessee, 72% basis ..... ton | ..... | 5.00 | ..... | 5.00 | ..... | 5.00 | 5.00 | 5.00 |
| Phosphorous Oxychloride 175 lb cyl ..... lb. | .18 | .20 | .18 | .20 | .18 | .20 | .18 | .25 |
| Red, 110 lb cases ..... lb. | .43 | .46 | .43 | .46 | .42 | .46 | .37½ | .42 |
| Yellow, 110 lb cases wks. lb. | .27½ | .32 | .27½ | .37½ | .31 | .37½ | .31 | .37½ |
| Sesquisulfide, 100 lb cs ..... lb. | .38 | .44 | .38 | .44 | .38 | .44 | .44 | .44 |
| Trichloride, cylinders ..... lb. | .18 | .20 | .18 | .20 | .18 | .20 | .18 | .25 |
| Phthalic Anhydride, 100 lb bbls wks ..... lb. | .15 | .16 | .15 | .16 | .15 | .16 | .15 | .20 |
| Pigments Metallic, Red or brown bags, bbls, Pa. wks ..... ton | 37.00 | 45.00 | 37.00 | 45.00 | 37.00 | 45.00 | 37.00 | 45.00 |
| Pine Oil, 55 gal drums or bbls Destructive dist ..... lb. | .59 | .62 | .59 | .63 | .61 | .64 | .63 | .64 |
| Prime bbls ..... bbl. | 8.00 | 10.60 | 8.00 | 10.60 | 8.00 | 10.60 | 8.00 | 10.60 |
| Steam dist. bbls ..... gal. | .59 | .61 | .54 | .61 | .54 | .70 | .65 | .70 |
| Pitch Hardwood ..... wks ..... ton | 20.00 | 25.00 | 20.00 | 35.00 | 5.00 | 45.00 | 35.00 | 45.00 |
| Plaster Paris, tech, 250 lb bbls ..... bbl. | 3.30 | 3.50 | 3.30 | 3.50 | 3.30 | 3.50 | 3.30 | 3.50 |
| Platinum, Refined ..... oz. | 37.50 | 38.00 | 37.50 | 38.00 | 38.00 | 38.00 | ..... | .... |
| Pontol, tanks ..... per gal. | ..... | .54 | .54 | .54 | ..... | ..... | ..... | ..... |
| **Potash** | | | | | | | | |
| Potash, Caustic, wks, solid ... lb. | .06¼ | .06¾ | .06¼ | .06¾ | .06¼ | .06¾ | .06¼ | .06¼ |
| flake ..... lb. | .0705 | .08 | .0705 | .08 | .0705 | .08 | .0705 | .08 |
| Potash Salts, Rough Kainit 12.4% basis bulk ..... ton | ..... | 9.20 | ..... | 9.20 | ..... | 9.20 | 9.10 | 9.20 |
| 14% basis ..... ton | ..... | 9.70 | ..... | 9.70 | ..... | 9.70 | 9.60 | 9.70 |
| Manure Salts ..... 20% basis bulk ..... ton | ..... | 12.00 | 12.00 | 12.65 | ..... | 12.65 | 12.50 | 12.65 |
| 30% basis bulk ..... ton | ..... | 19.15 | ..... | 19.15 | ..... | 19.15 | 18.95 | 19.15 |
| Potassium Acetate ..... lb. | .27 | .28 | .27 | .28 | .27 | .30 | .27 | .30 |
| Potassium Muriate, 80% basis bags ..... ton | ..... | 37.15 | ..... | 37.15 | ..... | 37.15 | 36.75 | 37.15 |
| Pot. & Mag. Sulfate, 48% basis bags ..... ton | ..... | 27.80 | ..... | 27.80 | ..... | 27.80 | 27.50 | 27.80 |
| Potassium Sulfate, 90% basis bags ..... ton. | ..... | 47.50 | 47.50 | 48.25 | .... | 48.25 | 47.75 | 48.25 |
| Potassium Bicarbonate, USP, 320 lb bbls ..... lb. | .07¾ | .09 | .07¼ | .09 | .07¼ | .10 | .09½ | .10 |
| Bichromate Crystals, 725 lb casks ..... lb. | .08 | .08½ | .08 | .08½ | .08 | .09 | .08¼ | .09½ |
| Powd., 725 lb cks wks .... lb. | .13 | .13¼ | .13 | 13¼ | .13 | .13 | .13 | .13¼ |

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# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

cent to 85 per cent of the sales for the previous season. Louisiana, Texas, Georgia and Tennessee sales ranged from 50 per cent to 60 per cent, while the sales in Alabama, Oklahoma and Mississippi ranged from 45 per cent to 49 per cent of those for the year ended July 31, 1931. Sales in Arkansas were 29 per cent of those for the previous season.

**Soda Ash** — Withdrawals in August were better than the previous month particularly on the part of the textile field. Prices on spot material were firm and unchanged. Petroleum refiners in the U. S. consumed $46,600,000 worth of sulfuric acid, soda ash, and caustic soda in 1929, according to data collected in the census of manufactures for that year. Consumption of these materials in 1929 compared with that in 1927 as follows:—

| | Tons | |
|---|---|---|
| | *1929* | *1927* |
| Sulfuric acid | 1,483,863 | 1,216,743 |
| Soda ash | 18,441 | 21,221 |
| Caustic soda | 134,054 | 95,026 |

Of the 1,483,863 tons of sulfuric acid consumed in 1929, 476,273 tons was reclaimed, and 1,007,590 was new acid. Texas, California, and Pennsylvania were the largest consuming areas. Details of consumption by States can be obtained from the Chemical Division of the Bureau of Foreign and Domestic Commerce, Washington.

**Caustic Soda** — Producers reported an improvement in tonnages specially into the rayon centers. Prices were well maintained. Interest is now centering in the 1933 contract season and in most quarters it is expected that the present schedule will be repeated, although some hesitation on the part of buyers may result from the lowering of chlorine prices.

**Sodium Nitrate** — Interest in the fertilizer industry centered in the announced reduction of $11 a ton for Chilean nitrate. This decline is bound to have a pronounced effect on the nitrogen situation. A more detailed survey of the situation is given in the news section of this issue. The schedule to fertilizer manufacturers is as follows:—For material in bulk, $22.40 per ton; in 200-pound bags $23.70 per ton, and in 100-pound bags $24.40 per ton. The schedule to fertilizer dealers is as follows:—For material in 200-pound bags, $24.30 per ton, and in 100-pound bags, $25 per ton. For delivery by truck or in less than carload amounts, $1 per ton extra is charged. The above prices are for material delivered over the balance of August and September only. Sellers were not quoting beyond September 30. Domestic producers at once announced prices competitive with the Chilean material. The sales agency plan adopted last year has been definitely abandoned.

| | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|
| Bichromate, 500 lb cks wks lb. | .05 | .05½ | .05 | .05½ | .05 | .07½ | .07 | .07½ |
| Bisulfite, 500 lb bbl wks....lb. | ..... | .04 | ..... | .04 | ..... | .04 | .04 | .04 |
| Chlorate, wks.....lb. | .05½ | .07½ | .05½ | .07½ | .05½ | .07½ | .05½ | .08 |
| Chloride, technical.....ton | 12.00 | 13.00 | 12.00 | 13.00 | 12.00 | 13.00 | 12.00 | 13.00 |
| Cyanide, 96-98%, 100 & 250 lb drums wks.....lb. | .15½ | .16 | .15½ | .17 | .16 | .17 | .16 | .20 |
| Fluoride, 300 lb bbls wks....lb. | .07 | .07½ | .07 | .07½ | .07 | .08½ | .08½ | .09 |
| Hydrosulfite, 200 lb bbls f.o.b. wks.....lb. | .22 | .24 | .22 | .24 | .22 | .24 | .22 | .24 |
| Hypochloride solution, 100 lb. cbys.....lb. | ..... | .05 | ..... | .05 | ..... | .05 | .05 | .05 |
| Hyposulfite, tech, pea cyrs 375 lb bbls wks.....100 lb. | 2.40 | 3.00 | 2.40 | 3.00 | 2.40 | 3.00 | 2.40 | 3.00 |
| Technical, regular crystals 375 lb bbls wks....100 lb. | 2.40 | 2.65 | 2.40 | 2.65 | 2.40 | 2.65 | 2.50 | 2.65 |
| Metanilate, 150 lb bbls....lb. | .44 | .45 | .44 | .45 | .44 | .45 | .44 | .45 |
| Metasilicate, c-1, wks..100 lb. | 2.85 | 3.25 | 2.85 | 4.00 | ..... | 4.00 | ..... | ..... |
| Monohydrate, bbls.....lb. | ..... | .02½ | ..... | .02½ | ..... | .02½ | .02½ | .02½ |
| Naphthionate, 300 lb bbl...lb. | .52 | .54 | .52 | .54 | .52 | .54 | .52 | .57 |
| Nitrate, 92%, crude, 200 lb. bags c-1 NY.....100 lb. | ..... | 1.22 | 1.22 | 1.73½ | 1.73½ | 2.07 | 1.99 | 2.22½ |
| Nitrite, 500 lb bbls spot....lb. | .07½ | .08 | .07½ | .08 | .07½ | .08 | .07 | .08 |
| Orthochlorotoluene, sulfonate, 175 lb bbls wks.....lb. | .25 | .27 | .25 | .27 | .25 | .27 | .25 | .27 |
| Perborate, 275 lb bbls.....lb. | .17 | .19 | .17 | .20 | .18 | .20 | .18 | .20 |
| Phosphate, di-sodium, tech. 310 lb bbls.....100 lb. | 2.40 | 2.50 | 2.40 | 2.75 | 2.50 | 3.00 | 2.65 | 3.25 |
| tri-sodium, tech, 325 lb bbls.....100 lb. | ..... | 3.20 | ..... | 3.20 | 3.15 | 3.50 | 3.25 | 4.00 |
| Picramate, 160 lb kegs ....lb. | .69 | .72 | .69 | .72 | .69 | .72 | .69 | .72 |
| Prussiate, Yellow, 350 lb bbl wks.....lb. | .11½ | .12 | .11½ | .12 | .11½ | .12 | .11½ | 12½ |
| Pyrophosphate, 100 lb keg..lb. | .15 | .20 | .15 | .20 | .15 | .20 | .15 | .20 |
| Silicate, 60 deg 55 gal drs, wks .....100 lb. | 1.65 | 1.70 | 1.65 | 1.70 | 1.65 | 1.70 | 1.6 | 1.70 |
| 40 deg 55 gal drs, wks .....100 lb. | ..... | .75 | ..... | .75 | .75 | 1.00 | .70 | .80 |
| Silicofluoride, 450 lb bbls NY .....lb. | .06 | .06½ | .05½ | .06¾ | .04 | .04½ | .04 | .05½ |
| Stannate, 100 lb drums.....lb. | .17 | .17½ | .17 | .19 | .18 | .26 | .24 | .43 |
| Stearate, bbls.....lb. | .20 | .25 | .20 | .25 | .20 | .25 | .20 | .29 |
| Sulfanilate, 400 lb bbls.....lb. | .16 | .18 | .16 | .18 | .16 | .18 | .16 | .18 |
| Sulfate Anhyd, 550 lb bbls c-1 wks.....lb. | .02 | .02¾ | .02 | .02¾ | .02 | .02¾ | .02½ | .02¾ |
| Sulfide, 80% crystals, 440 lb bbls wks.....lb. | .02½ | .02¼ | .02½ | .02¾ | .02½ | .02¾ | .02½ | .02¼ |
| 62% solid, 650 lb drums 1c-1 wks.....lb. | .03 | .03¼ | .03 | .03¼ | .03 | .03¼ | .03 | .03¼ |
| Sulfite, crystals, 400 lb bbls wks.....lb. | .03 | .03¼ | .03 | .03¼ | .03 | .03¼ | .03 | .03¼ |
| Sulfocyanide, bbls .....lb. | .28 | .35 | .28 | .35 | .28 | .35 | .28 | .35 |
| Tungstate, tech, crystals, kegs .....lb. | .60 | .70 | .60 | .88 | .80 | .88 | .81 | .88 |
| Solvent Naphtha, tanks..... wks.....gal. | .26 | .28 | .26 | .28 | .24 | .38 | .30 | .40 |
| Spruce, 25% liquid, bbls .....lb. | ..... | .01½ | ..... | .01 | .01 | .01½ | .01½ | .01½ |
| 25% liquid, tanks wks.....lb. | ..... | .01 | ..... | .01 | ..... | .01 | .01 | .01 |
| 50% powd, 100 lb bag wks..lb. | .02 | .02¼ | .02 | .02½ | .02 | .02¼ | .02 | .02¼ |
| Starch, powd, 140 lb bags .....100 lb. | 2.34 | 2.44 | 2.34 | 2.67 | 2.57 | 3.20 | 3.42 | 4.02 |
| Pearl, 140 lb bags.....100 lb. | 2.54 | 2.64 | 2.54 | 2.84 | 2.57 | 3.00 | 3.32 | 3.92 |
| Potato, 200 lb bags.....lb. | .03¾ | .04 | .03¾ | .06 | .05½ | .06 | .05½ | .06½ |
| Imported bags.....lb. | .04¾ | .05 | .04¾ | .06½ | .05½ | .06½ | .05½ | .06½ |
| Soluble.....lb. | .08 | .08½ | .08 | .08½ | .08 | .08½ | .08 | .08½ |
| Rice, 200 lb bbls.....lb. | .07½ | .08½ | .07½ | .10 | .09 | .10 | .09 | .10 |
| Wheat, thick bags.....lb. | .06 | .06½ | .06 | .07 | .06½ | .07 | .06½ | .07 |
| Thin bags.....lb. | .09½ | .10 | .09½ | .10 | .09½ | .10 | .09½ | .10 |
| Strontium carbonate, 600 lb bbls wks.....lb. | .07½ | .07½ | .07½ | .07½ | .07½ | .07½ | .07½ | .07½ |
| Nitrate, 600 lb bbls NY....lb. | .07 | .07½ | .07 | .07½ | .07 | .09½ | .09 | .09½ |
| Peroxide, 100 lb drs.....lb. | ..... | 1.25 | ..... | 1.25 | ..... | 1.25 | 1.25 | 1.25 |
| **Sulfur** | | | | | | | | |
| Sulfur Brimstone, broken rock, 250 lb bag c-1.....100 lb. | ..... | 2.05 | ..... | 2.05 | ..... | 2.05 | 2.05 | 2.05 |
| Crude, f. o. b. mines.....ton | 18.00 | 19.00 | 18.00 | 19.00 | 18.00 | 19.00 | 18.00 | 19.00 |
| Flour for dusting 99½%, 100 lb bags c-1 NY....100 lb. | ..... | 2.40 | ..... | 2.40 | ..... | 2.40 | 2.40 | 2.40 |
| Heavy bags c-1.....100 lb. | ..... | 2.50 | ..... | 2.50 | ..... | 2.50 | 2.50 | 2.50 |
| Flowers, 100%, 155 lb bbls c-1 NY.....100 lb. | ..... | 3.45 | ..... | 3.45 | ..... | 3.45 | 3.45 | 3.45 |
| Roll, bbls 1c-1 NY....100 lb. | 2.65 | 2.85 | 2.65 | 2.85 | 2.65 | 2.85 | 2.65 | 2.85 |
| Sulfur Chloride, red, 700 lb drs wks.....lb. | .05 | .05½ | .05 | .05½ | .05 | .05½ | .05 | .05½ |
| Yellow, 700 lb drs wks.....lb. | .03½ | .04½ | .03½ | .04½ | .03½ | .04½ | .03½ | .04½ |
| Sulfur Dioxide, 150 lb cyl....lb. | .07 | .07½ | .07 | .07½ | .07 | .07½ | .07 | .07½ |
| Extra, dry, 100 lb cyl.....lb. | .10 | .12 | .10 | .12 | .10 | .12 | .10 | .12 |
| Sulfuryl Chloride.....lb. | .15 | .40 | .15 | .40 | .15 | .40 | .10 | .65 |
| Talc, Crude, 100 lb bgs NY..ton | 12.00 | 15.00 | 12.00 | 15.00 | 12.00 | 15.00 | 12.00 | 15.00 |
| Refined, 100 lb bgs NY..ton | 16.00 | 18.00 | 16.00 | 18.00 | 16.00 | 18.00 | 16.00 | 18.00 |
| French, 220 lb bags NY....ton | 18.00 | 22.00 | 18.00 | 22.00 | 18.00 | 22.00 | 18.00 | 22.00 |
| Refined, white, bags....ton | 35.00 | 40.00 | 35.00 | 40.00 | 35.00 | 40.00 | 35.00 | 40.00 |
| Italian, 220 lb bags NY...ton | 40.00 | 50.00 | 40.00 | 50.00 | 40.00 | 50.00 | 40.00 | 50.00 |
| Refined, white bags.....ton | 50.00 | 55.00 | 50.00 | 55.00 | 50.00 | 55.00 | 50.00 | 55.00 |
| Superphosphate, 16% bulk, wks.....ton | 7.50 | 8.00 | 7.50 | 8.00 | 7.50 | 9.00 | 8.00 | 9.50 |
| Triple bulk, wks.....unit | ..... | .65 | ..... | .65 | ..... | .65 | .65 | .65 |
| Tankage Ground NY.....unit | ..... | 1.50&10 | 1.30&10 | 1.50&10 | 1.50 | 3.20&10 | 3.20&10 | 4.00&10 |
| High grade f.o.b. Chicago.unit | ..... | 1.60&10 | ..... | 1.50&10 | 1.50 | 3.25&10 | 3.25&10 | 3.85&10 |
| South American cif.....unit | ..... | 2.25&10 | ..... | 2.25&10 | 2.00 | 3.40&10 | 3.40&10 | 4.25&10 |
| Tapioca Flour, high grade bgs..lb. | .03½ | .05 | .03½ | .05 | .03¾ | .05 | .03 | .05½ |
| Medium grade, bags.....lb. | .03 | .04 | .03 | .04 | .03 | .04 | .02½ | .04½ |
| Tar Acid Oil, 15%, drums...gal. | .21 | .22 | .21 | .22 | .21 | .25 | .24 | .27 |
| 25% drums.....gal. | .23 | .24 | .23 | .24 | .23 | .28 | .26 | .30 |

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# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

**Titanium Dioxide** — Producers are now quoting car lot quantities at 17¼c per pound and ton lots at 18½c per pound. Less than ton quantities were offered at 19¼c per pound. Effective Aug. 29, quotations for barium base titanium pigment were lowered ½c per pound. The new schedule is based at 6c per pound for car lots in bags; 6¼c per pound for car lots in barrels; 6¼c per pound for less car lots in bags; and 6½c per pound for less car lots in barrels. This conforms with the schedule for calcium base titanium pigment announced on Aug. 16.

## FATS AND OILS

In sympathy with the generally better tone in the commodity markets fats and oils were in most instances higher in August with shipments in greater volume. Consumers were more eager to cover requirements for longer periods. Animal oils particularly reflected the sharp rise in the hog markets. The Dept. of Commerce announced that factory production of fats and oils (exclusive of refined oils and derivatives) during the three-month period ended July 30, 1932, was as follows: Vegetable oils, 403,438,850 pounds; fish oils, 5,938,158 pounds; animal fats, 553,147,389 pounds; and greases, 80,923,082 pounds; a total of 1,403,447,479 pounds. Of the several kinds of fats and oils covered by this inquiry, the largest production, 408,690,771 pounds, appears for lard. Next in order is cottonseed with 224,152,123 pounds; tallow with 142,260,759 pounds; linseed oil with 65,763,572 pounds; coconut oil with 62,357,667 pounds; corn oil with 24,320,418 pounds; soybean oil with 9,256,762 pounds; and castor oil with 8,939,195 pounds. The production of refined oils during the period was as follows: Cottonseed, 273,086,993 pounds; coconut, 54,350,527 pounds; peanut, 2,379,471 pounds; corn, 19,488,488 pounds; soybean, 2,035,876 pounds; and palm-kernel, 3,577,328 pounds. The quantity of crude oil used in the production of each of these refined oils is included in the figure of crude consumed. The data for the factory production and factory consumption, of fats and oils for the raw materials used in the production of vegetable oils for the three-month period appear in the following statement: (In some cases, where products were made by a continuous process, the intermediate products were not reported.)

| Kind | *Factory operations for the quarter ended June 30, 1932* Production (Pounds) | Consumption (Pounds) |
|---|---|---|
| Vegetable Oils: (1) | | |
| Cottonseed, crude | 224,152,123 | 302,429,350 |
| Cottonseed, refined | 273,086,993 | 223,273,278 |
| Peanut, virgin & crude | 2,989,579 | 3,212,945 |
| Peanut, refined | 2,379,471 | 1,847,227 |

| | Current Market | | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|---|
| Terra Alba Amer. No. 1, bgs or bbls mills 100lb. | 1.15 | 1.75 | 1.15 | 1.75 | 1.15 | 1.75 | 1 15 | 1 75 |
| No. 2 bags or bbls 100lb. | 1.50 | 2.00 | 1.50 | 2.00 | 1.50 | 2.00 | 1 50 | 2 00 |
| Imported bags lb. | .01½ | .01½ | .01½ | 01½ | .01½ | .01½ | 01½ | .01½ |
| Tetrachlorethane, 50 gal dr lb. | .08 | .09 | .08 | .09½ | .09 | .09½ | 09 | .09½ |
| Tetralene, 50 gal drs wks lb. | .12 | .13 | .12 | .20 | ..... | .20 | 20 | .20 |
| Thiocarbanilid, 170 lb bbl lb. | .25 | .28½ | .25 | .28½ | .25 | .28½ | 22 | .28½ |
| Tin | | | | | | | | |
| Crystals, 500 lb bbls wks lb. | ..... | .24 | .22 | 24 | .23 | .28½ | 25 | .34 |
| Metal Straits NY lb. | .211 | .21½ | .211 | .22½ | .21¾ | .27 | 26 | .38 |
| Oxide, 300 lb bbls wks lb. | ..... | .26½ | .23 | .26½ | .23 | .29 | 25 | .42 |
| Tetrachloride, 100 lb drs wks lb. | ..... | .1645 | .1465 | .165 | .1605 | .19½ | .18½ | .20½ |
| Titanium Dioxide 300 lb bbl lb | .17½ | .19¼ | .17¼ | .21 | .20½ | .22 | .21 | .50 |
| Calcium Pigment, bbls lb. | .06¼ | .06¼ | .06¼ | .07¾ | .06½ | .07¾ | .06½ | .07¾ |
| Toluene, 110 gal drs gal. | ..... | .35 | ..... | .35 | .34 | .35 | .35 | .40 |
| 8000 gal tank cars wks gal. | ..... | .30 | ..... | .30 | .27 | .30 | .30 | .35 |
| Toluidine, 350 lb bbls lb. | .88 | .89 | .88 | .89 | .88 | .94 | 90 | .94 |
| Mixed, 900 lb drs wks lb. | .27 | .32 | .27 | .32 | .27 | .32 | .27 | .32 |
| Toner Lithol, red, bbls lb. | .90 | .95 | .90 | .95 | .90 | .95 | .90 | .95 |
| Para, red, bbls lb. | ..... | .80 | ..... | .80 | ..... | .80 | 80 | .80 |
| Toluidine lb. | 1 50 | 1 55 | 1.50 | 1.55 | 1 50 | 1.55 | 1.50 | 1.55 |
| Triacetin, 50 gal drs wks lb. | .32 | .36 | .32 | .36 | .32 | .36 | .32 | .36 |
| Trichlorethylene, 50 gal dr lb. | .10 | .10½ | .10 | .10½ | .10 | .10½ | .10 | .10½ |
| Triethanolamine, 50 gal drs lb. | .40 | .42 | .40 | .42 | .40 | .42 | .40 | .42 |
| Tricresyl Phosphate, drs lb. | .25½ | .26 | .25½ | .26 | .26 | .45 | .33 | .45 |
| Triphenyl guanidine lb. | .58 | .60 | .58 | .60 | .58 | .60 | .58 | .60 |
| Phosphate, drums lb. | .50 | .65 | .50 | .65 | .50 | .70 | 60 | 70 |
| Tripoli, 500 lb bbls 100 lb. | .75 | 2.00 | .75 | 2.00 | .75 | 2.00 | 1 75 | 2 00 |
| Tungsten, Wolframite, per unit | 10.40 | 11.00 | 10.40 | 11.75 | 11.00 | 11.75 | .... | .... |
| Turpentine carlots, bbls gal. | ..... | .45 | .39 | .45½ | .36½ | .57 | .41 | .61½ |
| Wood Steam dist. bbls gal. | .42 | .43 | .42 | 45 | 38 | .61 | .36 | .52 |
| Urea, pure, 112 lb cases lb | .15 | .17 | .15 | .17 | .15 | .17 | .15 | .17 |
| Fert. grade, bags c.i.f. ton | .... | 82.60 | ..... | 82.60 | ..... | 82.60 | 108 00 | 108 00 |
| c. i. f. S. points ton | ..... | 82.60 | ..... | 82.60 | ..... | 82.60 | 109 30 | 109 30 |
| Valonia Beard, 42%, tannin bags ton | ..... | 30.50 | 29.50 | 34.00 | 33.00 | 40 00 | 39 50 | 40 00 |
| Cups, 30-31% tannin ton | 22.50 | 23.50 | 22.50 | 23.50 | 22.50 | 25.00 | 24 00 | 27.00 |
| Mixture, bark, bags ton | 23.00 | 24.00 | 23.00 | 26.00 | 25.00 | 31.00 | 30.00 | 32.50 |
| Vermillion, English, kegs lb. | 1.28 | 1.40 | 1.28 | 1.80 | 1.53 | 1 80 | 1 75 | 2 05 |
| Vinyl Chloride, 16 lb cyl lb. | ..... | 1.00 | ..... | 1.00 | ..... | 1 00 | 1 00 | 1 00 |
| Wattle Bark, bags ton | ..... | 27.00 | 26.00 | 33.00 | 32.00 | 41.00 | 40.00 | 47.75 |
| Extract 55%, double bags ex-dock lb. | .05 | .06½ | .05 | .06½ | .05 | .06½ | .05½ | .06½ |
| Whiting, 200 lb bags, c-l wks 100 lb. | .85 | 1.00 | .85 | 1.00 | .85 | 1.00 | 1 00 | 1 00 |
| Alba, bags c-l NY ton | ..... | 13.00 | ..... | 13.00 | .... | 13 00 | 13 00 | 13 00 |
| Gilders, bags c-l NY 100 lb. | ..... | 1.35 | ..... | 1.35 | ..... | 1.35 | 1.35 | 1 35 |
| Xylene, 10 deg tanks wks gal. | ..... | .29 | ..... | .29 | ..... | .29 | 28 | 31 |
| Commercial, tanks wks gal. | ..... | .26 | ..... | .26 | 24 | .30 | 25 | .33 |
| Xylidine, crude lb. | 36 | 37 | .36 | .37 | 36 | 37 | 37 | .38 |

### Zinc

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Zinc Ammonium Chloride powd., 400 lb bbls lb. | .05 | .05½ | ..... | 5.75 | 5 25 | 5 75 | 5 25 | 5.75 |
| Carbonate Tech, bbls NY lb. | .09½ | .11 | .09½ | .11 | 10½ | 11 | 10½ | .11 |
| Chloride Fused, 600 lb drs. wks lb | .05 | .05½ | .05 | .06 | 05½ | 06 | 05½ | 06 |
| Gran., 500 lb bbls wks lb | .05½ | 06 | .05½ | .06 | 05½ | .06 | .05½ | 06½ |
| Soln 50%, tanks wks 100 lb. | 2 25 | 3 00 | 2.25 | 3.00 | 2 25 | 3.00 | 2 25 | 3 00 |
| Cyanide, 100 lb drums lb | .38 | .39 | .38 | .39 | 38 | .39 | .38 | .41 |
| Dithiofuroate, 100 lb dr lb. | ..... | 1.00 | ..... | 1.00 | ..... | 1 00 | 1 00 | 1 00 |
| Dust, 500 lb bbls c-l wks. lb. | ..... | .0435 | .041 | .0525 | .0515 | .07 | .06 | 11 |
| Metal, high grade slabs c-l NY 100 lb. | ..... | 2.87 | 2.87 | 3.22½ | 3 50 | 4.45 | 4 10 | 6 45 |
| Oxide, American bags wks lb. | .05 | .05½ | .0485 | .07 | .06½ | 07 | .06½ | 07½ |
| French, 300 lb bbls wks lb. | .08½ | .11½ | .08½ | .11½ | .09½ | .11½ | 09½ | 11½ |
| Perborate, 100 lb drs lb. | ..... | 1.25 | ..... | 1.25 | ..... | 1 25 | 1 25 | 1 25 |
| Peroxide, 100 lb drs lb | ..... | 1.25 | ..... | 1.25 | ..... | 1 25 | 1 25 | 1 25 |
| Stearate, 50 lb bbls lb. | .16 | .17 | .16 | .22 | .18½ | 23 | 20 | 26 |
| Sulfate, 400 bbl wks lb. | 03 | 03½ | .03 | 03½ | 03 | 03½ | 03 | 03½ |
| Sulfide, 500 lb bbls lb. | .12 | .13 | .12 | .13½ | .13 | 16½ | 16 | 32 |
| Sulfocarbolate, 100 lb keg lb | .21 | .22 | .21 | .24 | .22 | 30 | 28 | 30 |
| Zirconium Oxide, Nat. kegs lb. | 02½ | 03 | .02½ | .03 | 02½ | 03 | 02½ | 03 |
| Pure kegs lb | 45 | 50 | .45 | .50 | 45 | 50 | 45 | 50 |
| Semi-refined kegs lb. | 08 | 10 | .08 | .10 | 08 | 10 | 08 | 10 |

## Oils and Fats

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Castor, No. 1, 400 lb bbls lb | ..... | .09¾ | .09½ | .10½ | .10 | .12 | .11½ | 13½ |
| No. 3, 400 lb bbls lb | .09½ | .09½ | .09 | .10½ | .09½ | 11¾ | .11 | .13 |
| Blown, 400 lb bbls lb. | .11¼ | .12 | .11¾ | .12½ | .12½ | .14 | .12 | .15 |
| China Wood, bbls spot NY lb. | ..... | .06 | .05¾ | .07¾ | .07 | .07½ | 07 | .13 |
| Tanks, spot NY lb. | .05¾ | .05½ | .05 | .06¾ | .06 | .07 | .06 | .11¼ |
| Coast, tanks, lb. | ..... | .05¼ | .04½ | .06½ | .05½ | .06½ | .05½ | .10½ |
| Cocoanut, edible, bbls NY lb | .... | .10¾ | ..... | .10¾ | ..... | .10¾ | .10¾ | .10¾ |
| Ceylon, 375 lb bbls NY lb. | .04½ | .04¾ | .04½ | .04¾ | .04½ | .06½ | .06¾ | .08¾ |
| 8000 gal tanks NY lb. | .03¾ | .03½ | .03¾ | .03¾ | .03¾ | .06 | .05½ | .07 |
| Cochin, 375 lb bbls NY lb | .04¾ | .05 | .04¾ | .06 | .05½ | .07 | .07½ | .09½ |
| Tanks NY lb. | .03½ | .04 | .03½ | .05 | .04½ | .05½ | .07 | .08¼ |
| Manila, bbls NY lb. | .04½ | .05 | .04½ | .05 | .04½ | .07 | .06½ | .08¼ |
| Tanks NY lb | .03½ | .03¾ | .03½ | .04 | .03½ | .05½ | .05½ | .07¼ |
| Tanks, Pacific Coast lb. | .03½ | .03¼ | .02¾ | .03½ | .03 | 05 | .05½ | .07 |

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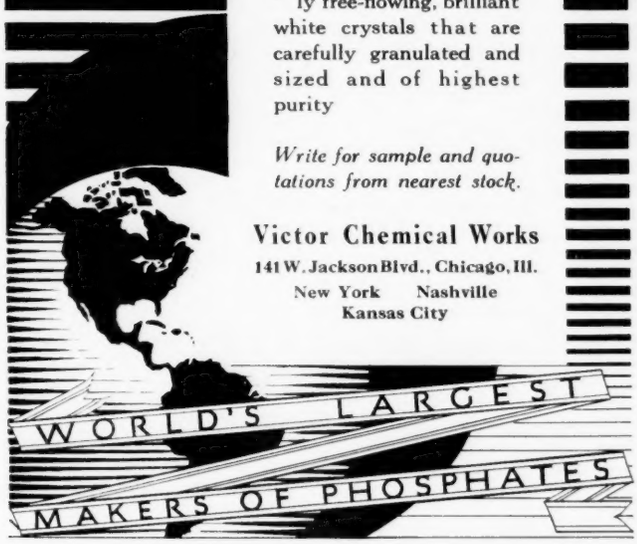


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# Prices Current and Comment

**Purchasing Power of the Dollar: 1926 Average—$1.00 - 1931 Average $1.404 - Jan. 1931 $1.283 - Aug. 1932 $1.62**

| Kind | Production (Pounds) | Consumption (Pounds) |
|---|---|---|
| Coconut, or copra, crude | 62,357,667 | 124,120,098 |
| Coconut, or copra, ref'd. | 54,350,527 | 59,170,810 |
| Corn, crude | 24,320,418 | 21,771,332 |
| Corn, refined | 19,488,488 | 3,999,422 |
| Soybean, crude | 9,256,762 | 5,460,287 |
| Soybean, refined | 2,035,876 | 2,842,157 |
| Olive, edible | ..... | 569,102 |
| Olive, inedible | ..... | 1,386,676 |
| Sulfur oil or olive foots. | ..... | 8,478,142 |
| Palm-kernel, crude | (2) | 4,582,599 |
| Palm-kernel, refined | 3,577,328 | 3,911,023 |
| Rapeseed | ..... | 1,841,020 |
| Linseed | 65,763,572 | 65,252,804 |
| Chinese wood or tung | ..... | 19,573,141 |
| Chinese vegetable tallow | ..... | 58,223 |
| Castor | 8,939,195 | 3,410,219 |
| Palm | ..... | 46,481,837 |
| Sesame | 2,543,446 | 2,310,892 |
| Sunflower seed | ..... | 3,195,577 |
| Perilla | ..... | 1,078,194 |
| All other | 3,116,088 | 478,751 |
| Fish Oils: (1) | | |
| Cod and cod-liver | 69,459 | 2,235,181 |
| Menhaden | 1,917,879 | 5,242,894 |
| Whale | 1,395,000 | 14,881,559 |
| Herring, includ. sardine | 2,390,625 | 12,013,940 |
| Sperm | ..... | 229,499 |
| All other, (including marine animal) | 165,195 | 499,583 |
| Animal Fats: | | |
| Lard, neutral | 4,746,368 | 4,405,507 |
| Lard, other edible | 403,944,403 | 1,135,850 |
| Tallow, edible | 12,650,858 | 12,452,665 |
| Tallow, inedible | 129,609,901 | 159,473,601 |
| Neat's-foot oil | 2,195,859 | 907,582 |
| Greases: | | |
| White | 15,985,646 | 12,912,458 |
| Yellow | 17,139,569 | 7,449,217 |
| Brown | 10,726,216 | 14,140,690 |
| Bone | 5,332,985 | 68,193 |
| Tankage | 11,487,055 | 638,841 |
| Garbage | 15,771,462 | 10,150,847 |
| Wool | 525,750 | 832,976 |
| Recovered | 811,924 | 661,981 |
| All other | 3,142,475 | 3,716,524 |
| Other Products: | | |
| Lard compounds and other lard substitutes | 221,006,177 | 76,521 |
| Hydrogenated oils | 118,538,990 | 103,432,875 |
| Stearin, vegetable | 5,897,799 | 6,946,615 |
| Stearin, animal, edible | 7,014,171 | 7,464,050 |
| Stearin, animal, inedible | 2,089,426 | 2,918,385 |
| Oleo oil | 17,470,752 | 3,499,038 |
| Lard oil | 3,964,145 | 2,230,969 |
| Tallow oil | 1,158,092 | 1,758,286 |
| Fatty acids | 29,595,932 | 29,556,897 |
| Fatty acids, distilled | 8,746,257 | 8,598,431 |
| Red oil | 6,307,899 | 4,104,713 |
| Stearic acid | 4,221,321 | 2,024,931 |
| Glycerin, crude 80% basis | 35,451,411 | 34,001,567 |
| Glycerin, dynamite | 9,404,866 | 2,972,397 |
| Glycerin, chem'ly pure | 16,391,194 | 1,651,261 |
| Cottonseed foots, 50% basis | 54,732,418 | 53,294,444 |
| Cottonseed foots, di't'ld | 17,576,778 | 17,403,963 |
| Other vegetable oil foots | 10,622,633 | 10,718,478 |
| Other vegetable foots, distilled | 1,266,698 | 41,312 |
| Acidulated soap stock | 15,816,478 | 11,622,361 |
| Miscellaneous soap stk. | 443,954 | 609,404 |

(1) The data of oils produced, consumed, and on hand by fish oil producers and fish canners were collected by the Bureau of Fisheries.

(2) Production of palm-kernel oil included in figures for "All Other" vegetable oils.

**Exports of Domestic Fats and Oils, Quarter Ended, June 30, 1932**

| Kind | Pounds |
|---|---|
| Oleo oil | 9,689,558 |
| Oleo stock | 1,548,925 |
| Tallow | 129,923 |
| Lard | 122,427,609 |
| Lard, neutral | 1,510,018 |
| Lard compounds, containing animal fats | 200,874 |
| Oleo stearin | 2,223,949 |
| Neat's-foot oil | 168,702 |
| Other animal oils, inedible | 112,466 |
| Fish oils | 127,114 |
| Grease stearin | 244,330 |
| Oleic acid, or red oil | 341,255 |
| Stearic acid | 113,202 |
| Other animal greases and fats | 14,469,122 |
| Cottonseed oil, crude | 1,396,147 |
| Cottonseed oil, refined | 4,203,113 |
| Coconut oil, crude | 7,195,102 |
| Coconut oil, refined | 569,287 |
| Corn oil | 286,439 |
| Soybean oil | 551,437 |
| Vegetable oil lard compounds | 627,291 |
| Other edible vegetable oils and fats | 446,852 |
| Linseed oil | 142,000 |
| Other expressed oils and fats, inedible | 359,484 |
| Vegetable soap stock | 3,229,155 |
| Glycerin | 68,630 |

| | Current Market | 1932 Low | 1932 High | 1931 Low | 1931 High | 1930 Low | 1930 High |
|---|---|---|---|---|---|---|---|
| Cod, Newfoundland, 50gal bbls ....gal. | .21 | .26 | .21 | .30 | .26 | .48 | .46 | .56 |
| Cod Liver see Chemicals | | | | | | | | |
| Copra, bags, N. Y.....lb. | .0195 | .02 | .0195 | .0235 | .0195 | .0325 | .039 | .046 |
| Corn, crude, bbls NY.....lb. | .04½ | .05 | .04½ | .09 | .05½ | .09 | .08½ | .10 |
| Tanks, mills.....lb. | .03¾ | .03¾ | .02⅞ | .03½ | .03⅜ | .07½ | .06½ | .08 |
| Refined, 375 lb bbls NY....lb. | .05½ | .06 | .05½ | .07 | .06¾ | .10½ | .09½ | .10½ |
| Tanks.....lb. | .05 | .05½ | .05 | .08¾ | .08 | .08¾ | .08 | .10 |
| Cottonseed, crude, mill.....lb. | ..... | .04⅛ | .02⅜ | .04⅛ | .03 | .07 | .06⅛ | .07⅛ |
| Degras, American, 50 gal bbls NY.....lb. | .02½ | .03 | .02½ | .04 | .03½ | .04½ | .03½ | .04½ |
| English, brown, bbls NY...lb. | .03 | .03½ | .03 | .04 | .03¾ | .05 | .04½ | .05 |
| Light, bbls NY .....lb. | .04 | .04½ | .04 | .04½ | .04 | .05½ | .05 | .05½ |
| Dog Fish, Coast Tanks.....gal. | ..... | .32 | ..... | .32 | ..... | .32 | .32 | .34 |

## Greases

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Greases, Brown.....lb. | ..... | .02⅝ | .01⅜ | .02⅛ | .02 | .04½ | .04 | .06½ |
| Yellow.....lb. | ..... | .02⅛ | .01⅜ | .03 | .02 | .05 | .03⅛ | .07⅛ |
| White, choice bbls NY.....lb | .02¾ | .03 | .02 | .04½ | .03½ | .05½ | .06 | .08½ |
| Herring, Coast, Tanks.....gal. | ..... | Nom. | ..... | Nom. | ..... | Nom. | ..... | ..... |
| Horse, bbls.....lb. | .05½ | Nom. | .05½ | Nom. | .05½ | Nom. | .05½ | Nom. |
| Lard Oil, edible, prime.....lb. | .08¾ | .09 | .08¼ | .10 | .10¾ | .13 | .12½ | .13½ |
| Extra, bbls.....lb. | ..... | .06½ | .05¾ | .07 | .07 | .10 | .10 | .12 |
| Extra No. 1, bbls.....lb. | .05¾ | .06 | .05½ | .07 | .06½ | .09¾ | .09¼ | .11 |
| Linseed, Raw, five bbl lots...lb. | ..... | .067 | .061 | .074 | .077 | .102 | .096 | .146 |
| Bbls c-l spot.....lb. | .053 | .059 | .053 | .066 | .069 | .098 | .092 | .142 |
| Tanks.....lb. | .047 | .053 | .047 | .06 | .063 | .092 | .086 | .134 |
| Menhaden Tanks Baltimore.gal. | .11½ | .12 | .11½ | .20 | .14 | .22 | .21 | .50 |
| Extra, bleached, bbls NY..gal. | .38 | .40 | .38 | .40 | .38 | .53 | .52 | .70 |
| Light, pressed, bbls NY...gal. | .30 | .31 | .25 | .34 | .33 | .38 | .36 | .64 |
| Yellow, bleached, bbls NY.gal. | .33 | .34 | .33 | .37 | .30 | .42 | .38 | .67 |
| Mineral Oil, white, 50 gal bbls .....gal. | .40 | .60 | .40 | .60 | .40 | .60 | .40 | .60 |
| Russian, gal.....gal. | .95 | 1.00 | .95 | 1.00 | .95 | 1.00 | .95 | 1.00 |
| Neatsfoot, CT, 20° bbls NY .lb. | .11½ | .11½ | .11¼ | .13½ | .13¼ | .16 | .16¼ | .17⅛ |
| Extra, bbls NY.....lb | ..... | .06½ | .05¾ | .07 | .07 | .10 | .09½ | .11¼ |
| Pure, bbls NY.....lb. | .07¾ | .08 | .07¾ | .09 | .09½ | .12 | .11¼ | .13⅛ |
| Oleo, No. 1, bbls NY.....lb. | ..... | .06½ | .05⅞ | .07 | .06⅞ | .08 | .08⅞ | .12½ |
| No. 2, bbls NY.....lb. | ..... | .05⅞ | .04¾ | .06 | .05¾ | .08 | .08⅛ | .11 |
| No. 3, bbls NY.....lb. | ..... | .06¾ | ..... | .06¾ | .06¾ | .09 | .09 | .10½ |
| Olive, denatured, bbls NY...gal. | .55 | .57 | .55 | .65 | .59 | .80 | .70 | 1.00 |
| Edible, bbls NY.....gal. | 1.50 | 1.60 | 1.50 | 2.00 | 1.50 | 2.00 | 1.75 | 2.00 |
| Foots, bbls NY.....lb. | ..... | .04⅝ | .04¼ | .05 | .04⅛ | .06¾ | .06 | .08 |
| Palm, Kernel, Casks.....lb. | .03½ | .04 | .035 | .04⅛ | .04¼ | .06¼ | .06 | .08⅛ |
| Lagos, 1500 lb casks.....lb. | .03¼ | .03¼ | .03¼ | .05 | .04 | .06 | .05⅛ | .07⅜ |
| Niger, Casks.....lb. | .03⅛ | .03¼ | .03 | .03½ | .03⅜ | .05¼ | .05⅛ | .07⅛ |
| Peanut, crude, bbls NY.....lb. | .04¼ | .04½ | .02¾ | .04 | .03¾ | .05 | ..... | Nom. |
| Refined, bbls NY.....lb. | .08¼ | .08½ | .08¼ | .09 | .08½ | .14 | .12 | .15 |
| Perilla, bbls NY.....lb. | ..... | .04½ | .03¾ | .05¾ | .05⅛ | .11 | .10 | .14⅛ |
| Tanks, Coast.....lb. | .03⅞ | .04 | .03½ | .05 | .05 | .09 | .08 | .11¼ |
| Poppyseed, bbls NY.....gal. | 1.60 | 1.70 | 1.60 | 1.75 | 1.70 | 1.75 | 1.70 | 1.75 |
| Rapeseed, blown, bbls NY...gal. | .52 | .54 | .52 | .70 | .68 | .73 | .74 | 1.00 |
| English, drms. NY.....gal. | ..... | .75 | ..... | .75 | ..... | .75 | .75 | .82 |
| Japanese, drms. NY.....gal. | .40 | .42 | .40 | .58 | .56 | .58 | .56 | .70 |
| Red, Distilled, bbls.....lb. | .06½ | .06⅜ | .06½ | .07 | .07⅛ | .09 | .08⅛ | .10⅛ |
| Tanks.....lb. | .05¾ | .06 | .05¾ | .06 | .06¼ | .08¼ | .07¼ | .09¼ |
| Salmon, Coast, 8000 gal tks..gal. | .15 | .19 | .15 | .19 | .19 | .22 | .42 | .44 |
| Sardine, Pacific Coast tks...gal. | .14 | .15 | .14 | .17½ | .17 | .19 | .18⅞ | .42 |
| Sesame, edible, yellow, dos...lb. | .08½ | .09 | .08½ | .09 | .08½ | .10¾ | .09 | .12 |
| White, dos.....lb. | .10 | .11 | .10 | .11 | .10 | .12 | .10 | .12½ |
| Sod, bbls NY.....gal.. | ..... | .40 | ..... | .40 | ..... | .40 | .40 | .40 |
| Soy Bean, crude..... | | | | | | | | |
| Pacific Coast, tanks.....lb. | .032 | .035 | .02¾ | .03½ | .03⅞ | .08 | .07 | .09½ |
| Domestic tanks, f.o.b. mills, .....lb. | .032 | .035 | .03 | .032 | .032 | .07 | .07 | .08½ |
| Crude, bbls NY.....lb. | ..... | .04 | .03¾ | .05 | .04¼ | .08 | .10 | .10¾ |
| Tanks NY.....lb. | ..... | .03½ | .03¼ | .04½ | .04¼ | .08 | .09 | .09¾ |
| Refined, bbls NY.....lb. | .045 | .05 | .045 | .06 | .058 | .09 | .13 | .13½ |
| Sperm, 38° CT, bleached, bbls NY.....gal. | .68 | .70 | .68 | .70 | .68 | .85 | .84 | .85 |
| 45° CT, bleached, bbls NY gal. | .63 | .65 | .63 | .65 | .63 | .80 | .79 | .80 |
| Stearic Acid, double pressed dist bags.....lb. | ..... | .08 | .07½ | .09 | 08½ | .11 | .13½ | .15 |
| Double pressed saponified bags .....lb. | .07¼ | .07½ | .07 | .07½ | .08 | .12 | .14½ | .15½ |
| Triple, pressed dist bags..lb | ..... | .10½ | .10¼ | .11 | .11 | .14 | .15½ | .17 |
| Stearine, Oleo. bbls.....lb. | ..... | .05¾ | .03¾ | .05¾ | .05½ | .08¼ | .08½ | .09¼ |
| Tallow City, extra loose.....lb. | ..... | .03⅛ | .02½ | .03⅜ | .02⅝ | .04 | .04½ | .07⅛ |
| Edible, tierces.....lb. | ..... | .04½ | .03½ | .04¼ | .03⅝ | .06 | .05½ | .09¼ |
| Tallow Oil, Bbls, c-1 NY...lb. | .05¾ | .06 | .05¾ | .07½ | .07 | .08¼ | .08½ | .11 |
| Acidless, tanks NY.....lb. | .07⅛ | .09 | .07¼ | .09 | .07⅞ | .09 | .08½ | .10 |
| Vegetable, Coast mats.....lb. | .06 | Nom. | .06 | Nom. | .06½ | Nom. | .06½ | Nom. |
| Turkey Red, single bbls.....lb. | .07 | .09 | .07 | .09 | .07 | .10 | .10 | .12 |
| Double, bbls.....lb. | .09 | .11 | .09 | .11 | .09 | .10 | .13 | .16 |
| Whale, bleached winter, bbls NY.....gal. | ..... | .74 | ..... | .74 | ..... | .74 | .74 | .74 |
| Extra, bleached, bbls NY..gal. | .57 | .58 | .57 | .60 | .58 | .77½ | .76 | .76 |
| Nat. winter, bbls NY.....gal. | .51 | .53 | .51 | .55 | .53 | .72 | .73 | .73 |

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**PRECIPITATED BARIUM SULPHATE**
(*Blanc Fixe*)

*Pulp and Dry*

■ ■

**The Schuylkill Chemical Company**
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# SILKS, SMELLS

## ... AND TEX-O-DORS

There is a definite reaction on the part of consumers, against that unpleasant finishing-oil odor which so often appears, in even the finest silks.

We know. We have a survey (and you can have a copy of it, if you care to write and ask us. It makes interesting reading, especially to textile people).

Dr. Donald Laird, well-known "reaction tester", made the survey. He submitted several pairs of stockings to each of two hundred and fifty women. The stockings were all exactly alike . . . except for ODOR. In pair "X", a small amount of a Tex-O-Dor (an aromatic product that counteracts finishing oil smell) had been used in the finishing.

And . . . ninety-two per cent of the women, without knowing a thing about this Tex-O-Dor, pointed to the treated stocking as a "better quality"!

Of course, it was the better smell.

This really vital advantage of a cleaner, fresher odor, can be a part of your textiles for very little money. Ask us about costs and other information on TEX-O-DORS.

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# "We"—Editorially Speaking

Another sign of the good old days—our barber tells us that he made $95 on Paramount last week.

"What Shall We Eat This Winter?" is the disquieting title of a regular department in the news letter issued weekly by the University of Minnesota. We have been wondering the same thing, so we read with great interest that Inez Hobart, Extension Nutritionist—what a sweet and appropriate title—suggests dry beans and onions. It's all a matter of taste, but at that, waste paper washed down with "red ink" is no gastronomic attraction either.

At the technological round table of the Chemists' Club, an eloquent member held forth the other day at length upon the advantages which would accrue to the country and to the ordinary citizen, if officeholders and pensioners were deprived of the right to vote. By argument and analogy, he supported this proposition ably, and graciously accepted several compliments on the originality of his proposal, until rudely asked if he had read the leading editorial on "Public Servants and Pensioners" in the August issue of CHEMICAL MARKETS. As a matter of fact, this radical proposal wasn't original with either of us. A law to deprive all paid public officials, and all veterans and other pensioners, of the right to vote, was proposed in the Roman Senate about eighteen hundred years ago.

Here is a nice chemical version of a good old story: A sample of boarding house coffee was submitted to the state chemist. He reported: "Advise changing water in the goldfish bowl more frequently."

The contribution to the problems of distribution in this month's issue is by Gordon MacKelcan, who should by birth be well qualified to recommend economics, and certainly his chemical business experience, dating back to the War under that consummate merchant, C. C. Speiden, has thoroughly taught him the practice that he preaches.

If we could publish the real authors of the article on the tenth proximo discount, it would read like a sort of Financial Social Register of our best chemical corporations.

Michigan and Mathieson have both hastened to inform us officially that there was no alkali propaganda in the announcement at the Genetics Conference, that drinking "bicarb" by expectant mothers produced 77 boys out of 78 births. Despite the increased demand, the price for the moment will not be advanced. Drinking lactic acid was said, by the same authorities, to produce girl babies only, and we are eagerly awaiting word from du Pont and Cyanamid.

In view of the recent development in the Far East, Dr. Mullins' comments on Japanese chemical trade conditions are of more than timely interest.

The famous old English recipe for jugged hare which began—"First catch a hare," was equalled by a paper read at the A. C. S. Denver meeting on the casein content of rabbits' milk, which was prefaced by a vivid description of how to capture and identify a milch rabbit. This is the perfect introduction to this very timely and important piece of research, the discussion of which occupied one half hour.

A. C. S. newspaper publicity quite outdid itself at Denver! What with gasoline from seals, vitamins to replace monkey glands, and casein from rabbits' milk, it seems that some astute chemical company had best buy up the Zoological Gardens of our bankrupt cities in order to assure a future source of necessary raw materials.

Henry T Hotchkiss, Jr., who surveys the pros and cons of sulfur versus pyrites graduated with the degree of chemical engineering from Brooklyn Poly in 1921. The following year he received his masters degree from Columbia and immediately turned to teaching. Finally deciding that the research field offered greater possibilities "Hank", as he is known to his intimates became associated with Raymond C. Bacon in charge of the New Rochelle Laboratories specializing on sulfur problems. Mr. Hotchkiss spent the greater part of two years at the various plants of the Texas Gulf Sulphur Co. and is conversant with both the technical and commercial problems of the sulfur industry. He is now engaged in revising the nomenclature of several of the organic chemical groups and part of his work has already been published. He is married and lives in Larchmont, N. Y.

Thoroughly imbued with the new spirit of optimism, the secretary of the Wholesale Druggists' Association mailed to each member a pair of rose colored glasses as a reminder of the coming convention at the Greenbrier. His generosity enabled us to obtain a splendid view of the eclipse on August 31.

Three books that every chemical executive ought to read:

1. "Recovery" by Sir Arthur Salter,—one of the soundest of the international economists, oftentimes financial representative of Great Britain at international conferences, who sets forth clearly and concisely, the causes and results of the world wide depression, particularly from its complicated financial aspects.

2. "Wonderland of Bureaucracy" by James S. Beck—the facts and figures of our expensive mis-government.

3. "General Sales Taxation" by Alfred D. Buehler—a splendid review of sales taxation experience the world round and a subject sure to come up for discussion frequently in the near future.


## Last Call

**Questionnaires and copy for advertisements for the Chemical Guide Book must reach us this month. You owe it to yourself to be properly listed in this standard purchasing guide for chemical raw materials and shipping supplies - circulation over 9,000, reaching all the consuming industries.**

# "DO ONE THING AND DO IT WELL"

With meticulous care and justifiable pride, the chef prepares dishes which win him a reputation. He is a master at this *one thing* which he does.

At EBG, the job to be done is the manufacture of Liquid Chlorine. A far cry from food, of course, but there is a parallel. Like the chef, we "specialize"; and because making this one product is our sole concern, we can do it well.

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